Department of Information Systems

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Microsoft®
Exchange Server 2010

Microsoft Exchange Server 2010
Installation and Configuration Guide

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HARDWARE AND OPERATING SYSTEM REQUIREMENTS

Hardware Requirements

Processor	Intel x64 or AMD64	*The Itanium IA64 is not supported.*
Memory	Minimum of 4 GB	*Recommended minimum of 8 GB RAM*
Disk Space	Minimum of 120 GB Recommended	
Partitioning	*All partitions MUST be NTFS and <u>cannot be encrypted</u>.*	
	Operating System (C:)	Minimum of 40 GB recommended
	TransactionLogs	Minimum of 40 GB recommended
	ExchangeDatabases	Minimum of 40 GB Recommended

Operating System Requirements

Exchange 2010 with Management Tools *Exchange 2010 cannot be installed on a Server Core installation of Server 2008.*	Server 2008 Standard 64-bit, Service Pack 2
	Server 2008 Enterprise 64-bit, Service Pack 2
	Server 2008 R2 Standard 64-bit, Service Pack 1
	Server 2008 R2 Enterprise 64-bit, Service Pack 1
Management Tools Only *To facilitate everyday operations, the management tools may be installed on a more accessible machine, such as the administrator's workstation.*	Server 2008 Standard 64-bit, Service Pack 2
	Server 2008 Enterprise 64-bit, Service Pack 2
	Server 2008 R2 Standard 64-bit, Service Pack 1
	Server 2008 R2 Enterprise 64-bit, Service Pack 1
	Windows Vista 64-bit, Service Pack 2
	Windows 7, 64-bit

Active Directory Pre-Installation Check

AD Forest Functional Level	Windows Server 2003 (or Higher)
	On a domain controller, open **Active Directory Domains and Trusts**
	Right-click on the <u>Forest</u> name and choose **Properties.**
	*If necessary, you may raise the domain functional level by **Right-Clicking** on the Forest name and choosing the option **Raise Domain Functional Level***

AD Schema Master	Must be running Server 2003 SP1 (or higher) *This may be checked on a domain controller*
	From a domain controller, activate the Schema Management console. This is done by logging in as an administrator and typing the following command from the **Command Prompt:** **regsvr32 schmmgmt.dll**
	Choose **OK.** You should receive a success confirmation.
	Open an MMC console by going to **start > run** and typing **mmc**
	In the MMC console, go to **File > Add/Remove Snap-in**
	Press **Add** and select **Active Directory Schema**
	Click **Add,** then click **Close.** Press **OK**
	Click on the <u>Active Directory Schema</u> icon to the left. When it loads, **right-click** on it and choose **Operation Masters.**
	Locate that server and log into it (if you're not on it already) and check its windows version by typing the following command from the <u>Run</u> dialog: **winver**
	If this server is beneath the minimum requirements, you may transfer that role through the <u>Operation Masters</u> option of the <u>Active Directory Schema</u> MMC.

Recommended Installations Before Deployment
Before attempting to install Exchange 2010, it is best to leave Automatic Updates on and allow it to go through and get its latest updates. In addition, you may consider downloading and installing the following additional items, which are requirements for running Exchange 2010. *It is advised for DIS personnel to have the following downloaded prior to performing the onsite*

installation, in the interests of saving time.	
Microsoft .NET Framework 3.5 SP1	
Service Pack Appropriate to Windows Version	(See Software Requirements, above)
Windows Management Framework Core Packages	http://support.microsoft.com/kb/968930
Microsoft Office 2010 Filter Pack, 64-bit	

INSTALLING EXCHANGE SERVER 2010

Setting the Pagefile Size

Microsoft recommends that the paging file for an Exchange 2010 system be set manually, to the amount of physical RAM plus 10 MB.

Click **Start**. Right-click on **My Computer** and choose **Properties.**	
	Take note of the Installed Memory, which will be listed in GB. For the example here, we have 1.79 GB RAM.
Choose **Advanced System Settings** from the menu on the left side of the screen	
	Choose the **Advanced** tab. Under the Performance section, choose the **Settings** button. This will bring up a window of Performance Options. Choose the **Advanced** tab.
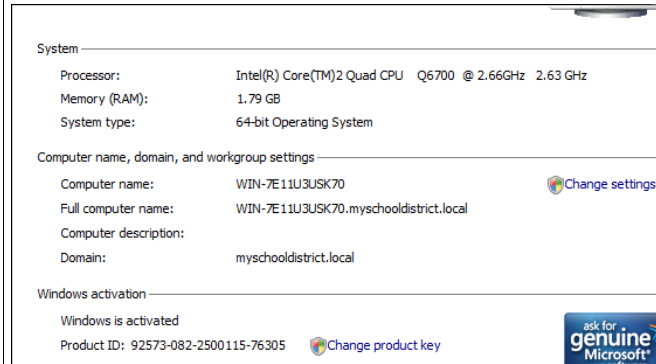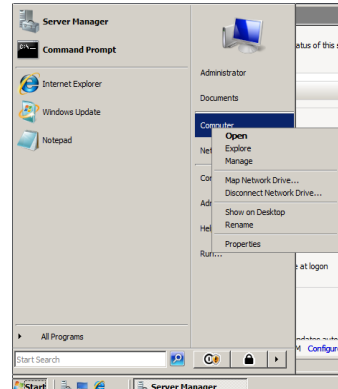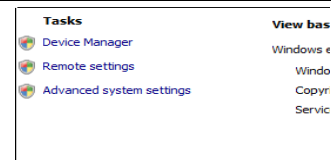
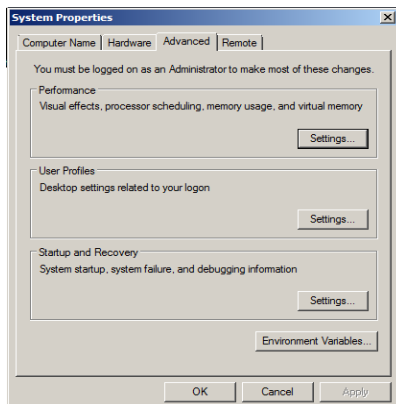|	
Under the section marked <u>Virtual Memory,</u> click the **Change** button.	
Next, calculate the amount of virtual memory you will need. Take the amount of installed memory (see above) and multiply by 1024. This will give you the amount of memory in Megabytes. Add 10 to this number. This is the size of the swap file you will want.	*Example:* *On the test server we built this on, we had 1.79 GB of RAM.* *1.79 * 1024 = 1832.96 MB of RAM.* *We then add 10 MB to the RAM for the pagefile size, which gives us 1842.96.* *Since we have to use whole numbers here, we can round that up to 1843 MB.*
	In the <u>Virtual Memory</u> window, **Uncheck** *Automatically manage paging file size for all drives*. Next, **choose** the radio button marked *Custom Size*. Enter the number that you came up with in the previous step in <u>both</u> the **Initial Size** and the **Maximum Size** boxes. Click **Set**, then **OK** through the remaining dialog boxes.
Click **OK** on each window until you are prompted to restart. Then choose **Restart Later.**	
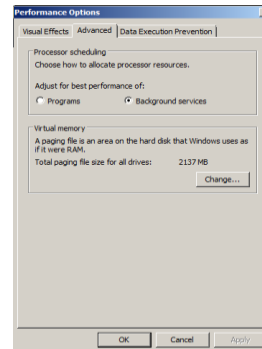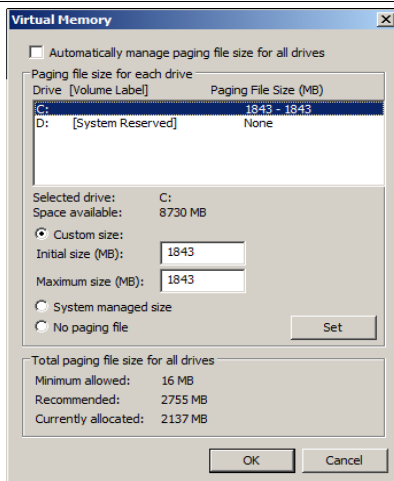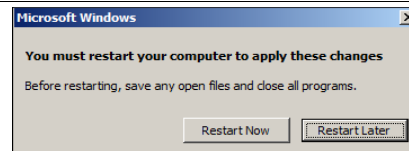
Installing the Microsoft Office 2010 Filter Packs

The Microsoft Filter packs allow search services on the server to index content of specific file types,

allowing you to search for content within a file. These are heavily utilized by Exchange 2010.

Go to www.microsoft.com and search for "Microsoft Office 2010 Filter Packs"	*Note: This will be provided for you on the administrator's desktop for the class.*
	Download and **Run** the file named FilterPackx64.exe
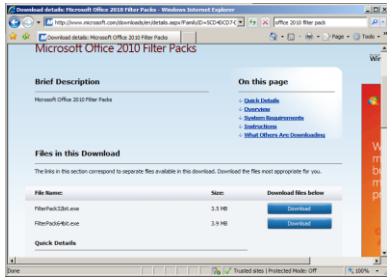
Installing the Exchange Server 2010 Prerequisites	

Open an elevated command prompt and navigate to the \scripts folder on the Exchange 2010 installation disc. Then type the following list of commands that work best for your requirements:

If NOT using Unified Messaging	
	ServerManagerCmd -ip Exchange-Typical.xml -Restart
If USING Unified Messaging *Note that Unified Messaging is not supported by APSCN LAN Support*	ServerManagerCmd -i Desktop-Experience ServerManagerCmd -ip Exchange-Typical.xml -restart
The Server Will Reboot once Installation of the Prerequisites Are Complete.	

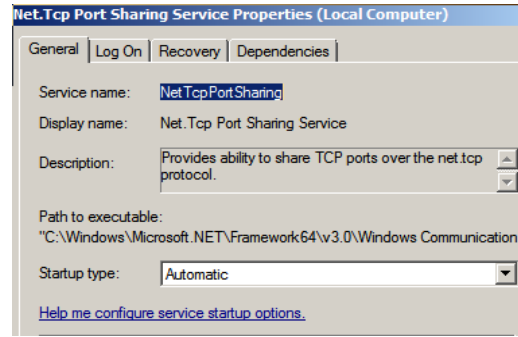| **Set the .NET TCP Port Sharing Service to Automatically Start**	
Click **START** and type in **services.msc** to bring up the Local Services Window. Choose **Standard** mode and right-click on **Net.Tcp Port Sharing.** Choose **Properties**.	*[Net.Tcp Port Sharing Service Properties dialog box showing General tab with Service name: NetTcpPortSharing, Display name: Net.Tcp Port Sharing Service, Description: Provides ability to share TCP ports over the net.tcp protocol, Path to executable: "C:\Windows\Microsoft.NET\Framework64\v3.0\Windows Communication, Startup type: Automatic]*
Make sure that the service is **Started** and choose **Automatic** from the Startup Type. Click **OK** to finish.	

Note that without performing this step, Exchange 2010 will not function properly and will not pass the pre-installation checks.

Installing the Basic Exchange Components	

Now that the pagefile has been set and the prerequisites have been installed, once the machine reboots you are ready to begin installing Exchange. Either insert the Exchange 2010 installation DVD-ROM, or alternatively browse to its network location and run Setup. We can skip to Step 3: Choosing your Language Pack.

Insert the <u>Exchange Server 2010 Installation DVD.</u> If the setup wizard does not start, navigate to the CD-ROM drive and run **SETUP.EXE**.	*[Microsoft .NET Framework splash screen showing Plan, Install, and Enhance sections for Exchange Server 2010]*
[Microsoft .NET Framework 3.5 SP1 Setup - Download and Install Progress window showing "Installing:" and "Download complete. You can now disconnect from the Internet." with Cancel button]	Choose **Step 1: Install .Net Framework 3.5 SP1**. Internet Explorer will open to the download page. *This option may be grayed out. If so, then please continue to Step 2: Install Windows Powershell v2* Download and run the installer file. Restart the computer when it is requested. After the restart, re-run the **setup.exe** file on the installation disc to continue.
	Notice that the following step is grayed out: **Step 2: Install Windows Powershell v2**
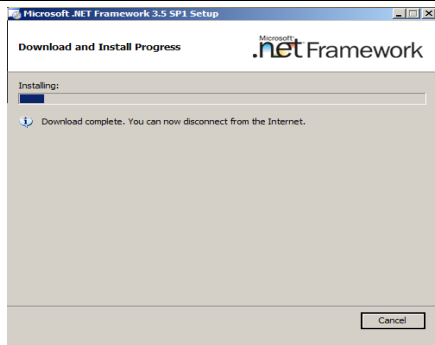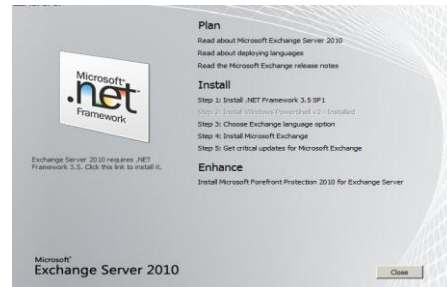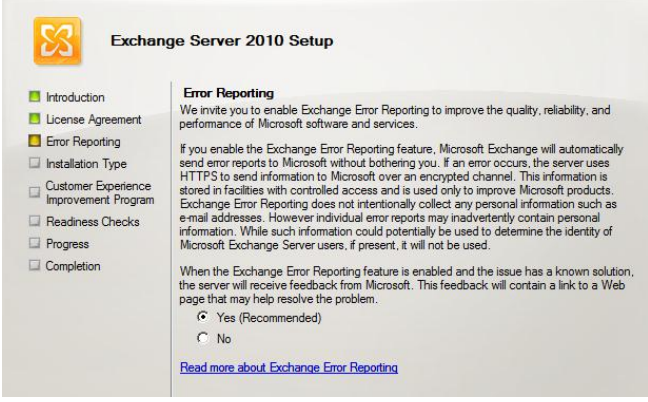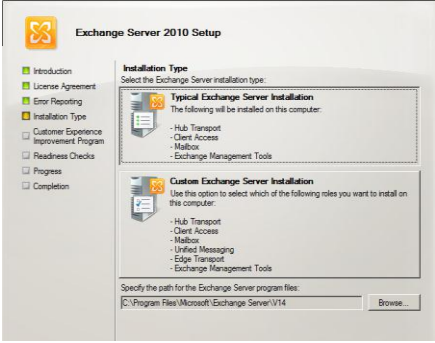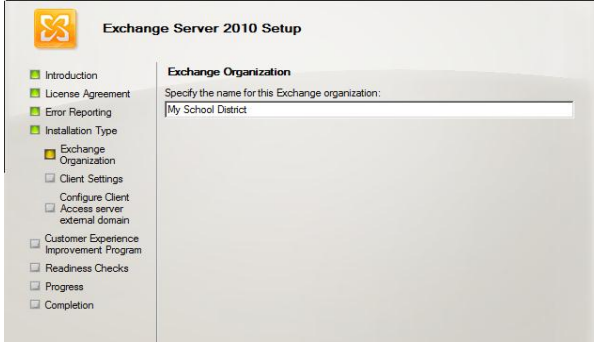
	This option may be grayed out. If so, then please continue to Step 3: Choose Languages
From the Setup menu, choose **Step 3: Choose Languages**. Choose **Install only languages from the DVD.**	
	Choose **Step 4: Install Microsoft Exchange**. **Accept** the license terms and click **Next**
Make a selection on the Error Reporting and click **Next** *What you choose here is up to you. However, as Microsoft does send feedback to the server about known issues, I personally recommend choosing Yes*.	
	Choose **Typical Exchange Organization.** Leave the path for the Exchange programs as it is, and click **Next**
Choose a name for your Exchange Organization *Example: My School District* Click **Next**	

(Exchange Server 2010 Setup — Client Settings screen)	Select <u>Client Settings.</u> *Choose **NO** <u>unless</u> your school is using Outlook 2003 or Entourage, which is a Macintosh Client for Exchange.* and choose **Next**.
(Exchange Server 2010 Setup — Configure Client Access server external domain screen)	Check the box that states **The Client Access Server Role Will Be Internet-Facing** When prompted, give your school's *external* domain name: *Example: **msd.k12.ar.us*** Click **Next**
Make a choice on the Customer Experience Program and choose **Next**. The server will then perform a series of checks to ensure all prerequisites have been met. Let it finish and if it does so without errors, you are free to click **Install.**	*The one exception to this is if you receive a warning that there is no A-record in DNS for the server. You may continue to install, but won't be able to receive mail until the external DNS records have been installed and are propagated globally.*
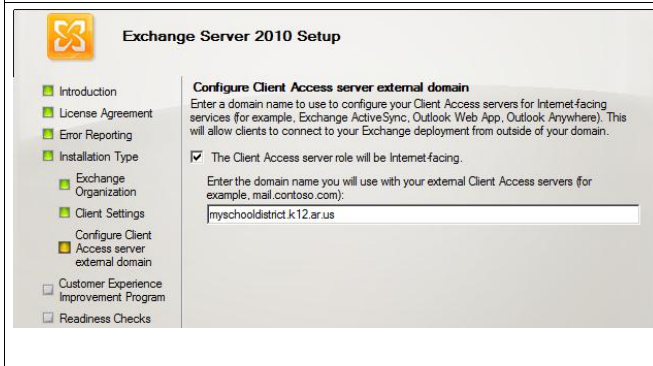
*Exchange will begin to install at this point. This may take some time, during which you might consider contacting the DIS helpdesk to set up your Firewall Feature Set entries, and to set the host, MX, and autodiscover records for your own domain. See **<u>Appendix B: DNS Settings</u>***

	Once Exchange has finished installing, from the <u>Exchange Setup</u> window, choose **Step 5: Get Critical Updates for Microsoft Exchange**. Follow the directions in the windows that follow.

Creating Partitions for the Transaction Logs and Exchange Databases

By default, Exchange 2010 places the transaction logs and exchange databases on the system partition. However, as these can quickly fill up if backups are not regularly done, it is recommended to set up dedicated partitions for the two types of files. This helps to prevent the system partition from filling up too quickly.

Go to **Start > Administrative Tools > Computer Management**	Active Directory Sites and Services Active Directory Users and Computers ADSI Edit Component Services Computer Management Data Sources (ODBC) DNS Event Viewer Failover Cluster Management Group Policy Management Internet Information Services (IIS) 6.0 Manager Internet Information Services (IIS) Manager iSCSI Initiator Local Security Policy
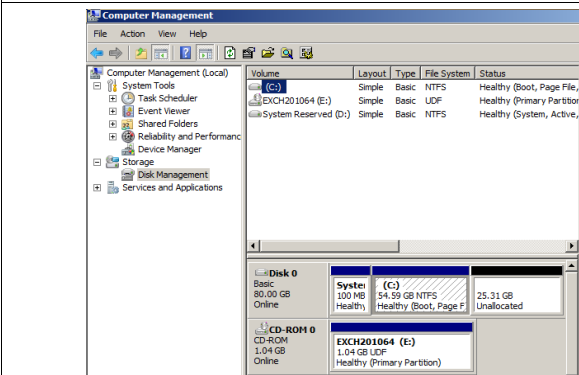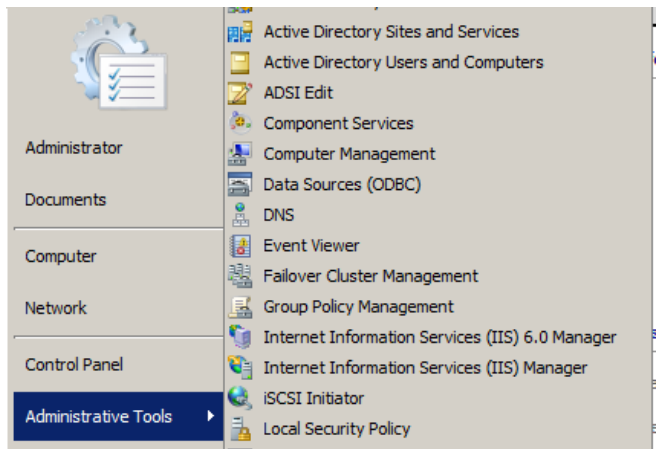
Expand **Storage**, then choose **Disk Management.**

Find the disk that you want to put the volumes on, then right-click on **Unallocated Space**.

Choose **New Simple Volume**

Next, give the amount of space you want for the Exchange Database volume, in megabytes. Remember that 1 GB = 1024 MB.

Here, we will be doing two 20-GB volumes in this example. 20 * 1024 = **20480** MB.

This number will not be sufficient for your organization's Exchange installations. Simply take the number of GB that you want to dedicate to the partition and multiply it by 1024.

Choose **Next**. Pick a drive letter of your preference and choose **Next**

New Simple Volume Wizard

Specify Volume Size
Choose a volume size that is between the maximum and minimum sizes.

Maximum disk space in MB:	51097
Minimum disk space in MB:	8
Simple volume size in MB:	20480

< Back   Next >   Cancel
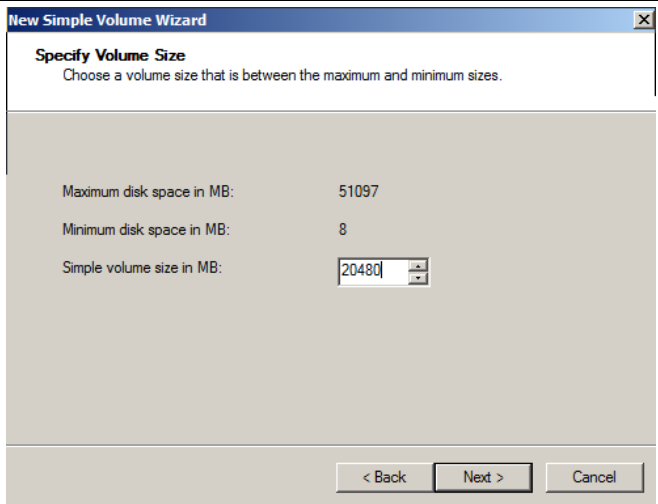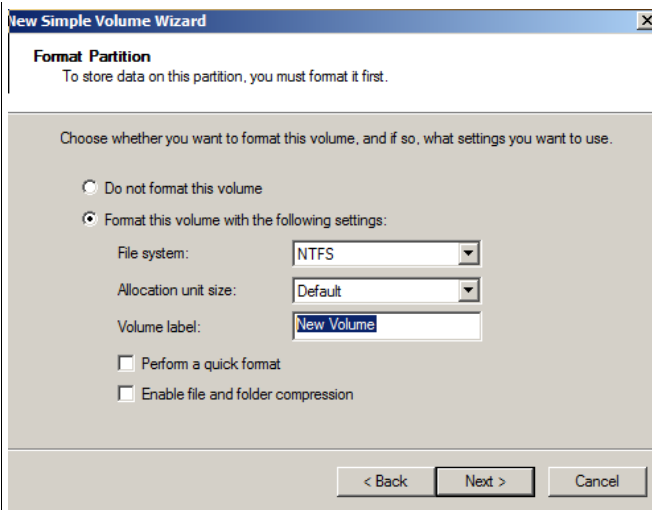
	On the Format Partition screen, leave the File system as **NTFS**, the allocation size unit as **Default**. Use a descriptor for the Volume Label *Examples:* ***Exchange Databases*** ***Exchange T-Logs*** Check the box for **Perform a Quick Format** Choose **Next**, then **Finish.**
Use the previous steps to create another volume. You want to create separate partitions, one to create the Exchange Databases, the other to hold the transaction Logs. Close out of Disk Management when done.	
	Navigate to each drive and create a folder for each mail store you want to make. *It's usually recommended to make one for Faculty and one for students. In this case, we will only be making one for faculty.*
Moving the Exchange Database and Transaction Logs to Their Respective Partitions	
Before we start using Exchange, we need to move the database and transaction logs off of the main system partition. This will keep it from interfering with the normal operations of Server 2008.	
Open the **Exchange Management Console** (EMC) Within the EMC, expand Organization Configuration, then Mailbox. In the center pane, choose the Database Management tab.	
	From the Mailbox pane, choose the Mailbox
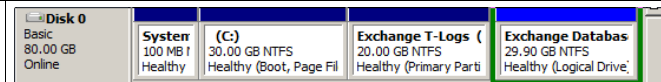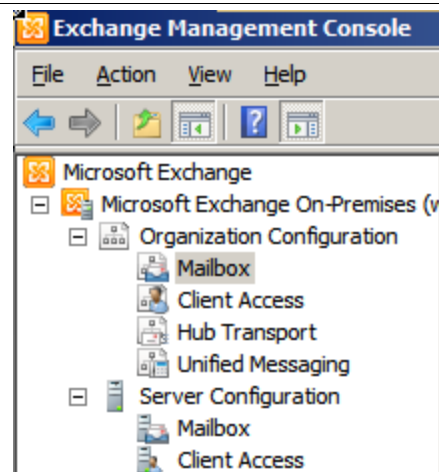
	Database that you wish to move. Then click on **Move Database** from the panel at the lower-right
Next, the **Move Database Path** wizard will open. Check to see what drive letters have been assigned to your partitions that you made for the databases and the transaction logs.	*[Move Database Path wizard screenshot showing Database name "Mailbox Database 1852777486", Database file path "C:\Program Files\Microsoft\Exchange Server\V14\Mailbox\Mailbox Database 1852777486", Log folder path "C:\Program Files\Microsoft\Exchange Server\V14\Mailbox\Mailbox Database 1852777486"]*
[Move Database Path wizard screenshot showing Database file path "F:\V14\Mailbox\Mailbox Database 1852777486\Mailbox Database 1852777486.edb", Log folder path "G:\V14\Mailbox\Mailbox Database 1852777486"]	Change the path accordingly. You may change the letter and leave the remainder of the path intact, or you can cut off the first part of it, starting at the V14. This is useful because it allows you to keep separate databases on the same partition, for example if you were separating students from faculty.
As the database must be taken offline to move, you will be prompted that it will be temporarily dismounted. Click **Yes**.	*[Microsoft Exchange dialog: "To perform the move operation, database "Mailbox Database 1852777486" must be temporarily dismounted, which will make it inaccessible to all users. Do you want to continue?" with Yes and No buttons]*
	Upon completion, the database will automatically re-mount.
Next, you are encouraged to change the name of the database. You may right-click on the name of the database and choose Properties.	*[Mailbox Database 1852777486 Properties window, General tab, showing "Mailbox Database 1852777486" and Database path: F:\V14\Mailbox\Mailbox Database 1852777486\Mai]*
[Faculty Mailbox Database Properties window, General tab, showing "Faculty Mailbox Database"]	Give it a descriptive name for this database. In our case, we are making one for the faculty, so let's change it to **Faculty Mailbox Database.**
At this point, you are ready to start configuring Exchange.	
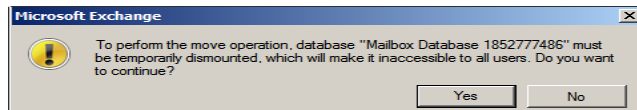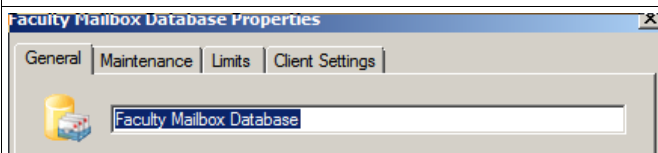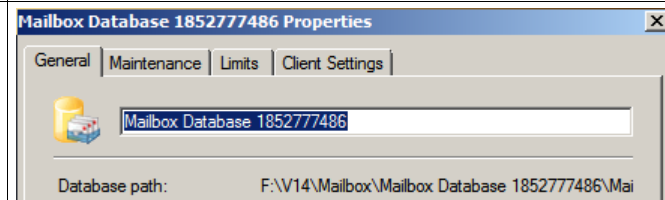
INITIAL CONFIGURATION OF EXCHANGE SERVER 2010

Creating the External Receive Connector

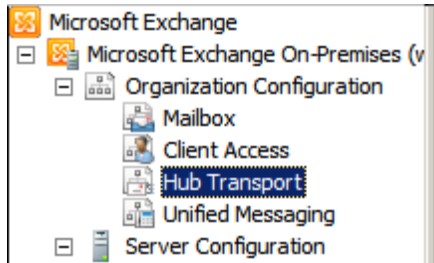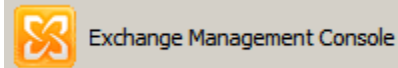|	
Open the **Exchange Management Console**, which is located at *Start > All Programs > Microsoft Exchange Server 2010 > Exchange Management Console*	Exchange Management Console

Microsoft Exchange
Microsoft Exchange On-Premises (w
  Organization Configuration
    Mailbox
    Client Access
    Hub Transport
    Unified Messaging
  Server Configuration
	In the tree to the left, **expand** Microsoft Exchange on-Premises. This will display the four subtrees of Organization, Server, and Recipient Configurations, as well as the Toolbox.

Expand Organization Configuration, then click on Hub Transport. Choose the **Accepted Domains** tab and then click **New Accepted Domain** from the action pane to the right**.** Give it the name **External E-Mail** Give it the Accepted Domain *msd.k12.ar.us* And as you are wanting to receive this mail to this server, choose the radio button marked **authoritative domain**. Click **OK** to finish.	**New Accepted Domain** Accepted domains are used to define which domains will be accepted for inbound e-mail routing. These are any domains for which you wish to receive e-mail. Name: External e-mail Accepted Domain: myschooldistrict.k12.ar.us After Microsoft Exchange accepts e-mail for this domain, it can handle the e-mail in several ways. Select from the following options: ○ Authoritative Domain. E-mail is delivered to a recipient in this Exchange organization. ○ Internal Relay Domain. E-mail is delivered to recipients in this Exchange organization or relayed to an e-mail server outside this Exchange organization. Use this setting if the domain is shared by this Exchange organization and another messaging system. ○ External Relay Domain. E-mail is relayed to an e-mail server outside this Exchange organization.

Hub Transport
Unified Messaging
Server Configuration
  Mailbox
  Client Access
  Hub Transport
  Unified Messaging
Recipient Configuration
  Mailbox
  Distribution Group
  Mail Contact
  Disconnected Mailbox
  Move Request
Toolbox
 	
WIN-F54GO8T3F7P
Receive Connectors
Name ▲ Status
Client WIN-F54GO8T3F7P Enabled
Default WIN-F54GO8T3 Enabled
  Disable
  Remove
  Properties
  Help
	Expand Server Configuration, then choose Hub Transport.
	
	Right-click on Default (*) Receive Connector and choose **Properties**

Choose the **Permission Groups** tab, then **check** the box marked **Anonymous Users.**

Click **OK** to finish.

The reason we do this is to tell Exchange that it can accept mail from other servers that don't have accounts on your domain. If it is not checked, then the mail will be rejected.
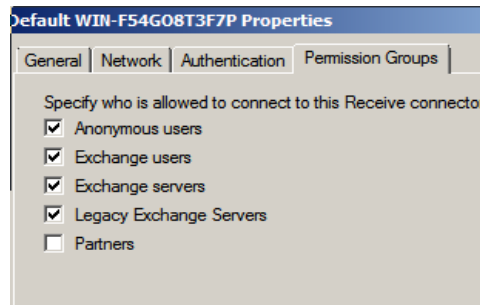
Creating the External Send Connector

*Now that we have set up Exchange to receive mail for your domain, the next step is to set it to be able to send mail for your domain. That is accomplished through the use of **Send Connectors**.*

Send connectors are not based on the server itself, but on the organization. You will need to open EMC and choose **Organization Configuration, Hub Transport.**
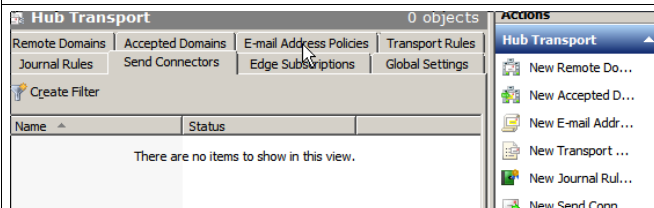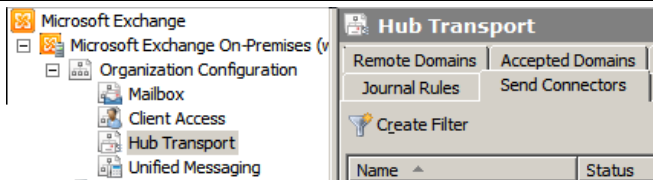
Next, choose the tab marked **Send Connectors**, and click **New Send Connector** from the Action pane on the right.

Name the new send connector **"*Outbound e-Mail Send Connector*".**

Change the drop-down to **Internet**

Next you have to give an Address space. Click the ADD button. In the address field, type *

Check the box marked Include all Subdomains

Click **OK.**

	Click **Next** on the <u>Network Settings</u> page.
Click **Next** through the next few screens, then choose **New**	You've created the Send Connector now. You should be set to both send and receive mail.

<u>Note:</u> If your site is using the state spam filter or another filtering and relaying service, don't forget that your send and receive connectors need to be modified to only receive from the approved filters and to only send through the relay. For instructions on how to do this, please consult Appendix C: Locking Down Exchange to a Relay Filter.
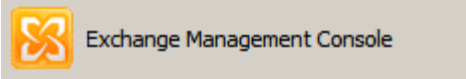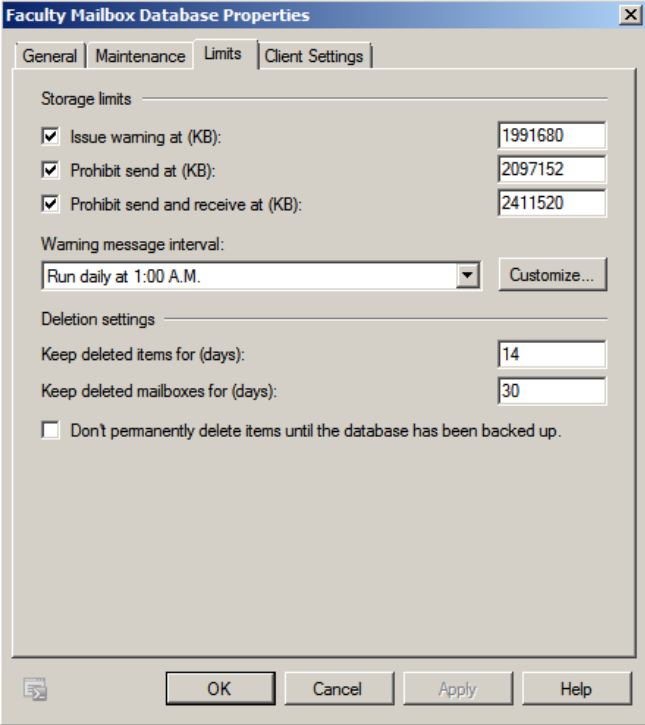
Creating Database-Wide Mailbox Size Limits

It is best to limit down the size of the users' mailboxes at the database level. This ensures that no users are allowed to exceed this limit without special authorization.

Open the Exchange Management Console. Navigate to **Organization Configuration > Mailbox.** Choose the **Database Management** tab. Right-click on the database you would like to configure limits on, and choose **Properties.**	Exchange Management Console
	In the Properties window that opens, choose the **Limits** tab. Exchange can be configured to perform specific actions at three size thresholds. These thresholds are specified in Kilobytes. The **Issue Warning** sends an e-mail to the user that he/she is approaching his or her mailbox size limit. The **Prohibit Send** option, if activated, will restrict a user's ability to send new mails when his/her mailbox has exceeded a certain size. The **Prohibit send and receive** option, if activated, will deny both sending mail and receiving the new mail, and will send a message back to the sender stating that their message could not be delivered due to a full mailbox. *For the deletion settings, please consult your*

	organization's data retention policies.

Note that the settings here are the most restrictive that would apply at your organization. For users that need larger mailboxes, you may override these settings at a user level.

Creating E-Mail Address Policies
E-mail address policies allow you to automatically assign consistent mail addresses and aliases to users. This becomes active when the users are mail-enabled, which can save a lot of work.

In the EMC console tree, navigate to **Organization Configuration > Hub Transport**	
	Click on the **E-Mail Address Policies** tab.
In the <u>Actions</u> pane in the upper-right, choose **New E-Mail Address Policy**	
	In the wizard that opens, call the new policy, **Faculty Mail Address Policy**. Click **Browse** and navigate to the **Faculty** organizational unit. Click **OK**, then click **Next.** Don't check ANY of the conditions. Choose **Next.**
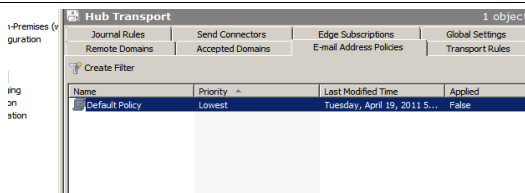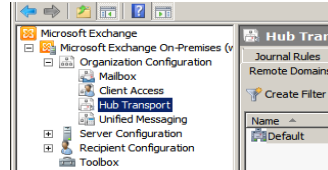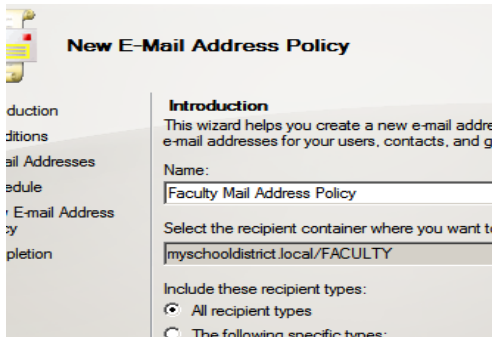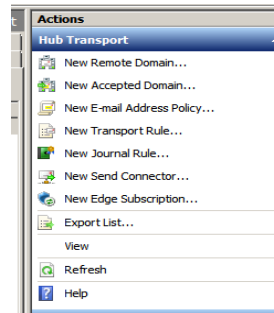
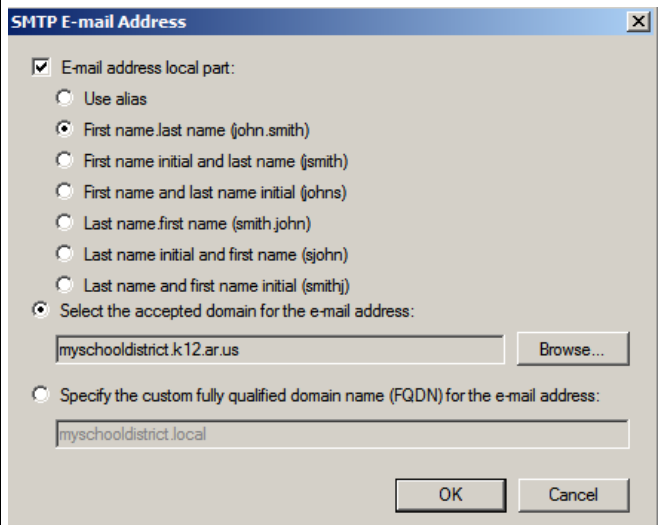|	
The next window will ask about e-mail addresses. Choose the **Add** button. Choose the **First name.last name (john.smith)** radio button. Choose the **Select the accepted domain for the e-mail address**. Choose **Browse**, then choose your **External** e-mail domain. Click **OK** *Note: If you are moving from Novell, you may also want to allow the legacy first initial last name naming standard (jsmith). To do this, click **Add** again, choosing the **first name initial and last name (jsmith)** radio button. Make certain to choose the **Select the accepted domain for the e-mail address** radio button and browse again to the external container.* Choose **Next** when you are finished setting e-mail address names.	(SMTP E-mail Address dialog) ☑ E-mail address local part: ○ Use alias ⦿ First name.last name (john.smith) ○ First name initial and last name (jsmith) ○ First name and last name initial (johns) ○ Last name.first name (smith.john) ○ Last name initial and first name (sjohn) ○ Last name and first name initial (smithj) ⦿ Select the accepted domain for the e-mail address: myschooldistrict.k12.ar.us [Browse...] ○ Specify the custom fully qualified domain name (FQDN) for the e-mail address: myschooldistrict.local [OK] [Cancel]
	Continue to click **Next** until you see the <u>Configuration Summary</u>. Click **New.** Once this completes, click **Finish.**

*Recommendation: You can allow students the ability to have e-mail accounts for messaging the teachers, while limiting both their ability to receive e-mail from the outside world and from one another. If you would like to allow this, create another e-mail address policy for the students, setting their addresses to the **myschooldistrict.local** domain.   Not granting them an external domain (such as **msd.k12.ar.us**) prevents external mail from being utilized. Once this is done, you <u>will</u> need to create transport rules that limit their abilities to contact one another or from sending out mail through Exchange.*

Creating OU-Based Dynamic Distribution Lists

Dynamic Distribution Lists create an easy method of sorting users within Exchange, based on their location in Active Directory. The use of these lists are helpful for both creating mail policies (such as limiting the students' ability to mail one another or any distribution lists) or for the faculty to send mail to the entire student body, the faculty, or even to students or faculty from a specific campus or graduating year. In this example, we will create distribution lists for the faculty and for the students.
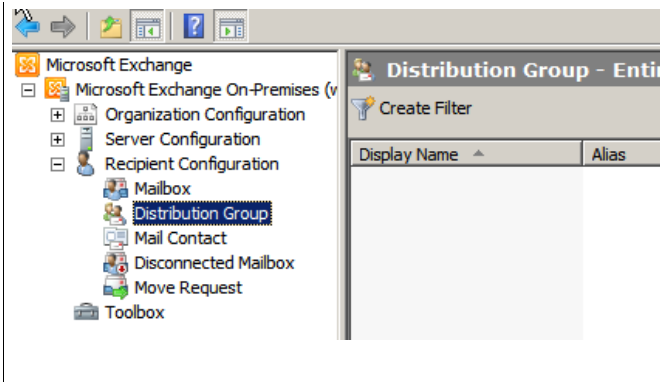
In the Exchange Management Console, navigate to **Recipient Configuration,** then choose **Distribution Group.**

In the Action pane to the right, click on **New Dynamic Distribution List** to open the New Dynamic Distribution List Wizard.

Check the box marked **Specify the Organizational Unit**, and click the **Browse** button.

Choose the **Faculty** organizational unit, then click **OK.**

For the Name use *All District Faculty*

For the Alias, use *AllDistrictFaculty*

Click **Next**
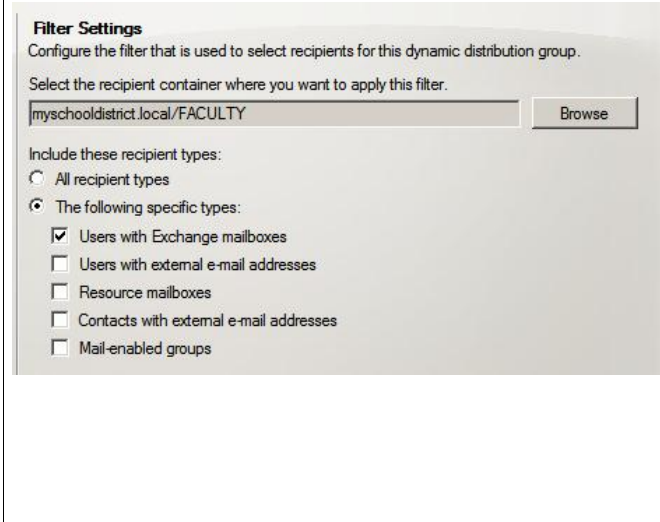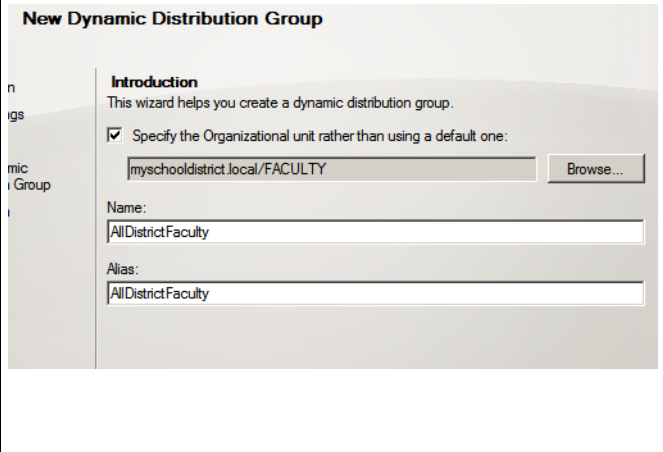
Under the Filter Settings, choose the radio button marked **The Following Specific Types**, then check the box for **Users With Exchange Mailboxes.**

Click **Next**.

On the Conditions page, leave the conditions alone and choose **Next.**

Click **New** to create the Dynamic Distribution List.

When it has completed, click **Finish**

*Repeat the previous steps to create an **All District Students** Dynamic Distribution Group, using the Organizational Unit called **Students**. This will be used in creating the Student Mail Transport Policy that limits the student's e-mail abilities.*

Creating a Student Mail Transport Policy

*The default behavior with Exchange thus far is to send through mail as it is sent or received. This isn't always optimal behavior; for example, it may not be in the district's best interest to allow the students to e-mail one another, or distribution lists, for fear of abuse. In cases like these, policies can be set through the use of **Transport Rules**, which are a series of filters that prevent the delivery of any undesirable mail. This segment is optional, and covers the creation of such a list of rules.*
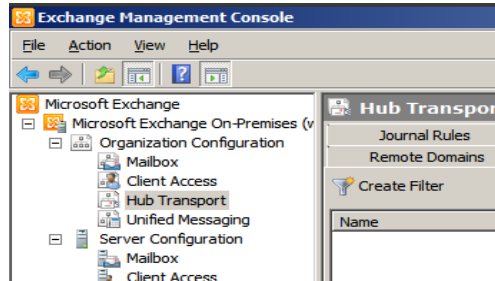
Open the **Exchange Management Console** (if it is not already open) and navigate to **Organization Configuration > Hub Transport.**	
	In the Hub Transport main window, select the tab marked **Transport Rules**. In the Actions pane (to the right), click on **New Transport Rule** This will open up the New Transport Rule Wizard
Name the new transport rule: ***Default Student Outbound Mail Rule*** For the comment, use: ***This rule limits students to only being able to contact the faculty.*** Check the box marked **Enable Rule**, then hit **Next**	
Under the Actions page, choose **Send Rejection Message to Sender with Enhanced Status Code.** Under Step 2, click **Rejection Message.** Set the Bounce Message to ***Rejected: Students are only permitted to e-mail faculty members.*** Although the Enhanced Status Codes are not used, it is required for the rule. Select it and use the arbitrary number **5.7.1.** Click **Next,** then **Next** through the Exceptions page. Click on **New.**	*Note: You may wish to create more rules that likewise deny students from directly mailing to each of the distribution*
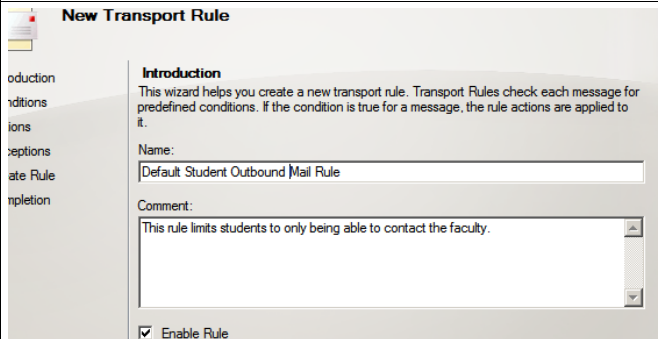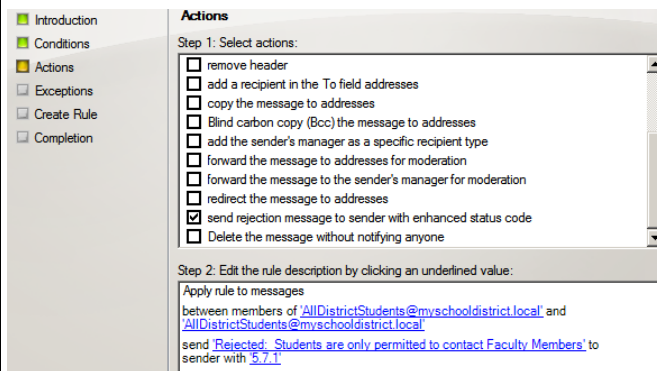
	groups.
After the rule has been created, click on **Finish**.	

Mail-Enabling Users	

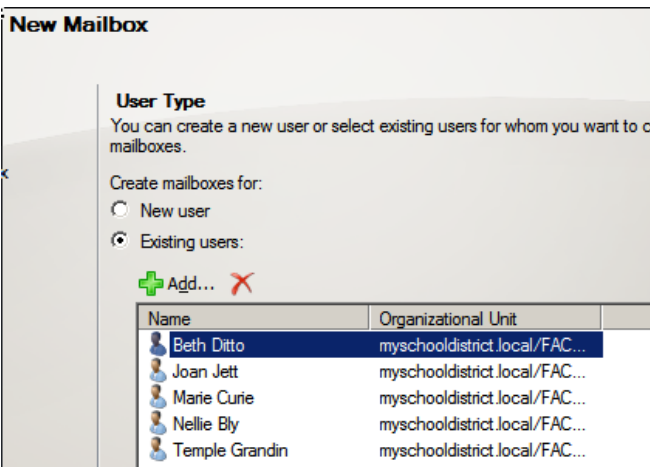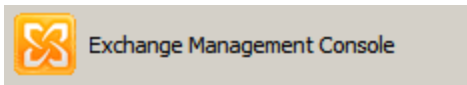|	
From the **Exchange Management Console**, **expand** Recipient Configuration, then Mailbox. **Click** on Mailbox.	Exchange Management Console
New Mailbox **User Type** You can create a new user or select existing users for whom you want to c mailboxes. Create mailboxes for: ○ New user ● Existing users: Add... ✕ | Name	Organizational Unit
Beth Ditto	myschooldistrict.local/FAC...
Joan Jett	myschooldistrict.local/FAC...
Marie Curie	myschooldistrict.local/FAC...
Nellie Bly	myschooldistrict.local/FAC...
Temple Grandin	myschooldistrict.local/FAC...		In the Action pane to the right, click **New Mailbox** to bring up the New Mailbox Wizard. Select **User Mailbox**. Click **Next**

Choose **Existing Users**
 	
Click **Add**
 	
Select the AD account(s) and click **OK** and **Next**
 	
Click **Next** on the Mailbox Settings page
 	
Finally, click **New** to begin creating the mailboxes.
	Mailbox Settings
	Enter the alias for the mailbox user, and then select the mailbox location and policy settings.
	
	Alias:
	An alias will be automatically generated for each new mailbox.
	
	☐ Specify the mailbox database rather than using a database automatically selected:
	    Browse...
	
	☐ Managed folder mailbox policy:
	    Browse...
	
	☐ Exchange ActiveSync mailbox policy:
	    Browse...
	
	⚠ Managed custom folders is a premium feature of messaging records management. Mailboxes with policies that include managed custom folders require an Exchange Enterprise Client Access License (CAL).

New Mailbox **Completion** The wizard completed successfully. Click Finish to close this wizard. Elapsed time: 00:00:03 Summary: 5 item(s). 5 succeeded, 0 failed. Settings x Beth Ditto — ✓ Completed ⊻ Joan Jett — ✓ Completed ⊻ Marie Curie — ✓ Completed ⊻ Nellie Bly — ✓ Completed ⊻ Temple Grandin — ✓ Completed ⊻	Once Exchange finishes creating the mailboxes, you may click **Finish**.

<table>
<tr><td colspan="2" align="center">Setting Up A Delay For Exchange Services</td></tr>
<tr><td colspan="2">There is a known issue with the Exchange 2007 and 2010 that can cause difficulties in starting up or shutting down the System Attendant service. This is especially noticeable in cases where Exchange is also working as a Global Catalog server (not a recommended configuration) or in cases where the Exchange 2010 server starts before the Domain Controllers are fully functional (such as after a power surge). These registry tweaks cause certain Exchange services to have a slight delay in starting, which gives the AD servers on the domain to come up.

In this portion, we set a delay on the Exchange Service Attendant. There are also two services that do not normally wait for the Service Attendant to start—the Information Store and the Active Directory Topology services. We set these to wait on the Service Attendant to start before attempting to start.

For more information, consult Microsoft's knowledge base at <u>http://support.microsoft.com/kb/940845</u></td></tr>
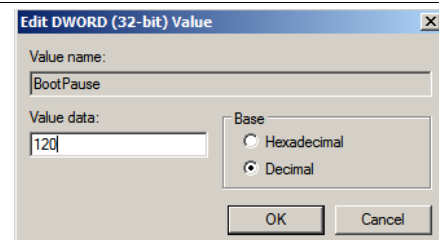<tr><td>Open the Registry editor with the command:

Regedit</td><td></td></tr>
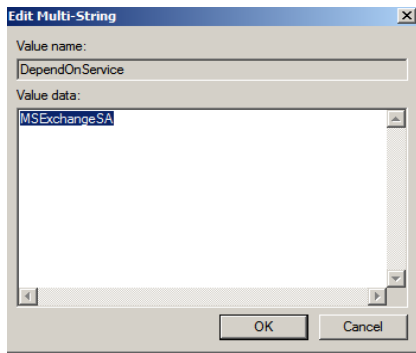<tr><td></td><td>Navigate to the following key:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeSA\Parameters</td></tr>
<tr><td>Right-click in the right-hand pane and choose New > DWORD (32-Bit value)

Name the value BootPause and give it the <u>decimal</u> value of 120</td><td>Edit DWORD (32-bit) Value

Value name:
BootPause

Value data: 120
Base: ○ Hexadecimal ● Decimal

OK   Cancel</td></tr>
</table>

|	
	Next, navigate to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeADTopology\ Right-click in the values. Choose **New > Multi-string Value** Name the new value **DependOnService** Edit it and change the value to **MSExchangeSA**
Finally, navigate to: HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeIS\ Right-click in the values. Choose **New > Multi-string Value** Name the new value **DependOnService** Edit it and change the value to **MSExchangeSA** Exit out of the Registry Editor.	
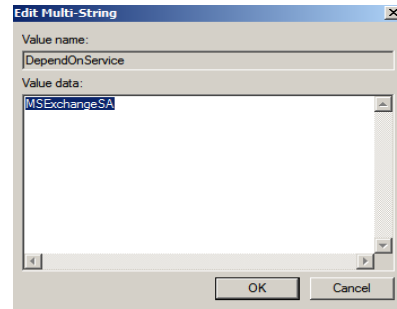
Setting Up a Scheduled Backup of Exchange

One of the critical ways that Exchange 2010 maintains data is that it ensures that the database it has on hand can always be kept up to current. As a result, every transaction—e-mails, et cetera—is kept in an exchange transaction log file. These can and will fill up a drive, and until they are backed up, Exchange will NOT purge them.

*IMPORTANT: **Do NOT delete the log files manually.** It is important that they be played back into the latest backup of the database in case of failure, to ensure that nothing is lost. However, if they fill up the drive, then the Exchange services will not start.*

To correct this and prevent it from recurring, it's important to set up a regular backup of the Exchange database. The backup MUST be run while Exchange is in a running state. Once this is in place, Exchange will detect the backups and purge the log files accordingly.

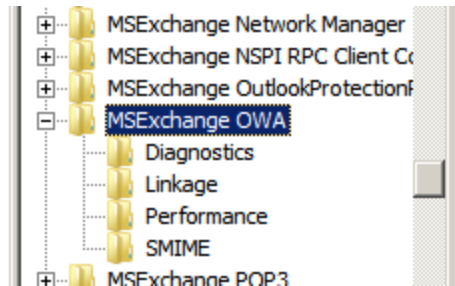*You will find instructions on creating a backup solution in Appendix D: Backing Up Microsoft Exchange 2010*

Configuring the Change Password Feature for OWA

The Outlook Web Access page can be used so that users may change their passwords remotely. In many cases, it is advantageous to set this up so that when a user's password is expired, that they can set a new password through OWA.

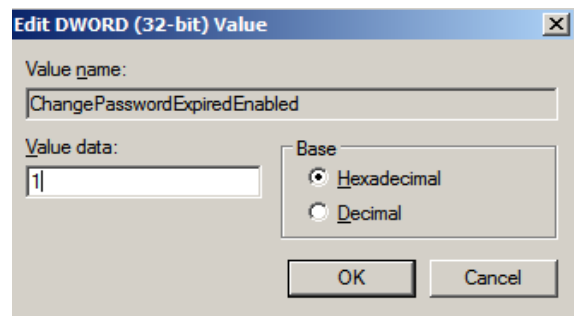|	

Programs (1)
  regedit
 	
  See more results
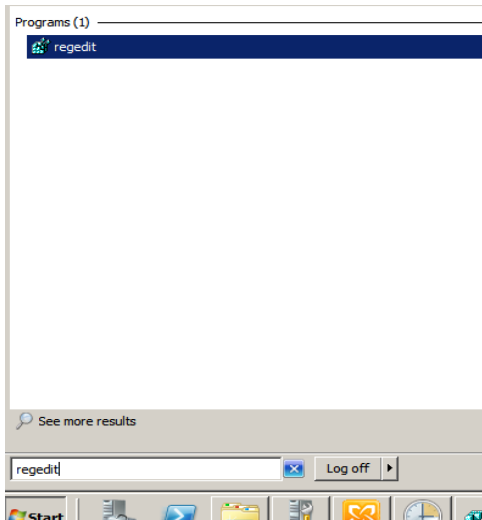 	
  regedit   [x] Log off ▶
  Start   [icons]
	Open the registry editor. You may do this by going to **Start**, typing regedit in the search box, and pressing **Enter.**

Navigate to the following registrey subkey:
HKEY_LOCAL_MACHINE
SYSTEM\CurrentControlSet
Services\MSExchange OWA
	⊞ MSExchange Network Manager
	  ⊞ MSExchange NSPI RPC Client Co
	  ⊞ MSExchange OutlookProtectionF
	  ⊟ MSExchange OWA
	       Diagnostics
	       Linkage
	       Performance
	       SMIME
	  ⊞ MSExchange POP3

Within <u>MSExchange OWA</u>, create a new DWORD value: Right-click in the right-hand pane and choose **New > DWORD (32-bit value)**	

Give the new value the following name and value:
 	
Name: **ChangeExpiredPasswordEnabled**
Value: **1**
 	
Click **OK** and exit the Registry Editor.
	Edit DWORD (32-bit) Value [x]
	Value name:
	ChangePasswordExpiredEnabled
	Value data: Base
	1 ⦿ Hexadecimal
	                 ○ Decimal
	            OK Cancel

This registry change must be made on each Client Access Server that utilizes Outlook Web Access.	

MANAGING EXCHANGE SERVER 2010

Managing User Mailboxes

User Mailbox Overview

In Exchange 2010, the user accounts and the mailboxes are two discrete objects. The mailbox itself is stored within the Exchange 2010 Mailbox database, and is not tied to any particular user.

The user account is stored within Active Directory. This is the same account that is used for file permissions, logging onto the system, printing, et cetera.

When Exchange 2010 is installed, there are specific extensions made to the Active Directory Schema, which gives a new set of attributes to the user accounts. Among these is a field that links a specific Exchange mailbox to a particular user account.

The advantage of this is that the accounts are modular. While this may seem to be unnecessarily complicated, it does have its uses: If a person leaves his or her position, his or her mailbox can be assigned to his or her successor.

If the user's Active Directory account is accidentally deleted, the mailbox and its contents still exist, and can be easily recovered.

The purpose of this section will be to demonstrate how to mail-enable a new user, how to re-assign a mailbox to an accidentally-deleted user, how to disable a user's mailbox, and how to delete orphaned mailboxes.

Mail-Enabling Users

In this example, we have a new user that has joined the faculty. His account has been created as clayton.stallings.

Before Clayton can receive mail, Exchange 2010 must be instructed to create a database for this user.
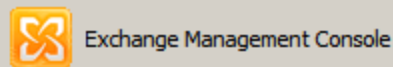
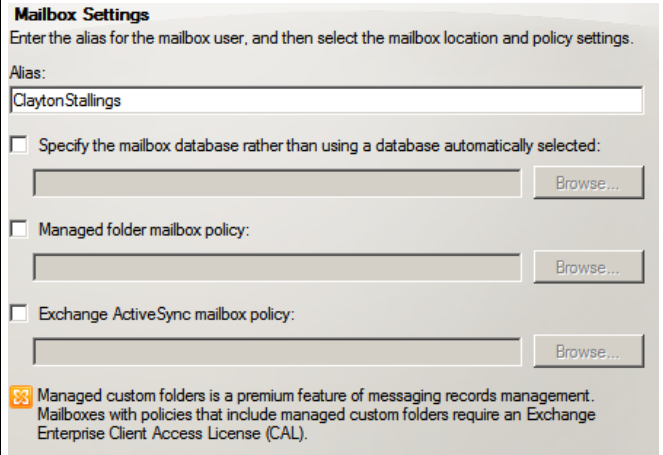|	
	Open the Exchange Management Console and navigate to **Recipient Configuration > Mailbox**
On the <u>Action</u> pane to the right, click on **New Mailbox.** Choose **User Mailbox** Click **Next**	
	In the <u>User Type</u> window, choose the radio button marked **Existing Users**. Click the green **Add** button, then choose the user or users you would like to create mailboxes for and choose **OK.** Click **Next**.

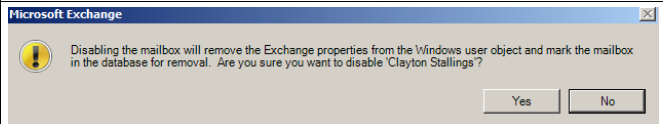|	
If you are doing this for multiple users, Exchange 2010 will attempt to design an alias name for the mailboxes automatically, based on the username. These fields may be used to match up accidentally-orphaned accounts to their respective owners. If you are mail-enabling a single user, then you may be asked to create the alias on your own. Typically it is recommended to use FirstnameLastname. If your policies have already been set, then you may leave the remaining boxes unchecked. Click **Next,** then **New**, then **Finish**	**Mailbox Settings** Enter the alias for the mailbox user, and then select the mailbox location and policy settings. Alias: ClaytonStallings ☐ Specify the mailbox database rather than using a database automatically selected: [ ] Browse... ☐ Managed folder mailbox policy: [ ] Browse... ☐ Exchange ActiveSync mailbox policy: [ ] Browse... ❌ Managed custom folders is a premium feature of messaging records management. Mailboxes with policies that include managed custom folders require an Exchange Enterprise Client Access License (CAL). *A mailbox alias is a field on the mailbox that contains an easy way of identifying the user that it was last assigned to.*

Disabling A User's Mailbox

Let's assume that Clayton has worked for the district for quite some time, then chosen other employment. It is decided that his e-mail is full of information that would be invaluable to his replacement.
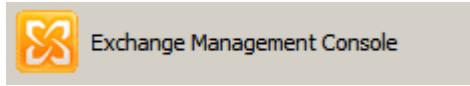
|	
Open the Exchange Management Console and navigate to **Recipient Configuration > Mailbox**	❌ Exchange Management Console
	Choose the mailbox to be disabled, then click **Disable** in the action pane.
A warning box will appear. Click **Yes**.	**Microsoft Exchange** ⚠ Disabling the mailbox will remove the Exchange properties from the Windows user object and mark the mailbox in the database for removal. Are you sure you want to disable 'Clayton Stallings'? [Yes] [No]

Working With Disconnected Mailboxes

The next two examples deal with mailboxes that are orphaned, that is to say, disconnected from any users. However, these are not always visible. To force them to show, it is important to run the Clean-MailboxDatabase commandlet.
This commandlet is ran within the Microsoft Exchange 2010 Management Shell, which is a special instance of Powershell that has extra plugins used to interface with the Exchange 2010 system.

Open the <u>Exchange Management Shell</u> by going to **Start > All Programs > Microsoft Exchange Server 2010 > Exchange Management Shell**.	❌ Exchange Management Shell
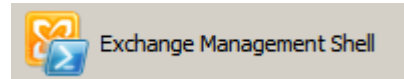
Once in the Exchange Management Shell, get a list of the mailbox databases using this commandlet:

Get-MailboxDatabase

Next, issue the Clean-MailboxDatabase commadlet, using the name of the database (from the previous step) within quotes. Here we are assuming that the name is <u>Faculty Mailbox Database:</u>

Clean-MailboxDatabase "Faculty Mailbox Database"

Note that you will not receive any feedback once this completes; it will return to the prompt.

Re-Assigning An Orphaned Mailbox

Building from our example above, let's assume that Clayton has worked for the district for quite some time and moved on to other employment. However, his mailbox is full of information that his replacement, Jane French, will need access to. You will need to open up Active Directory Users and Computers and create an account for Jane. We will then assign Clayton's mailbox to her.

In the Exchange Management Console, navigate to **Recipient Configuration > Disconnected Mailbox.**
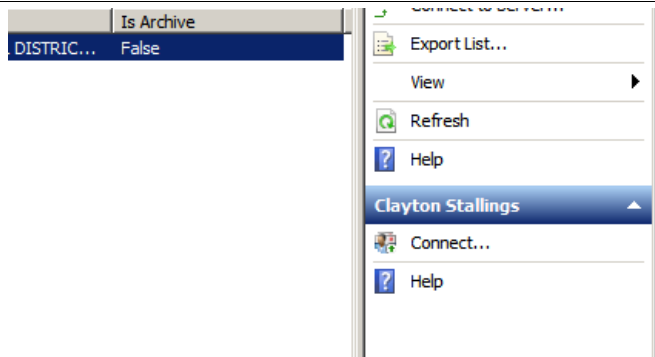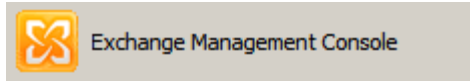
Select the mailbox, then choose **Connect** from the Action pane.

Choose the appropriate type of mailbox; in this case it will be a **User Mailbox**

Click **Next.**

Choose the radio button marked **Existing User** and use the **Browse** button to find Jane French's account.

Give an easy-to-index alias here—I do FirstnameLastname, and choose any policies that apply.

Alias: **JaneSmith**

Click **Next**, then **Connect**, then **Finish**


Creating Mailboxes for Non-User Resources

A room mailbox is a resource mailbox assigned to a meeting location, such as a conference room, auditorium, or training room. An equipment mailbox is a resource mailbox assigned to a resource that's not location specific, such as a portable computer, projector, microphone, or a company car.

These are handy for scheduling, as it allows all users the ability to check out resources as needed in a centralized calendar.

Creating Mailboxes for Rooms

Open the Exchange Management Shell. Navigate to **Recipient Configuration > Mailbox.**
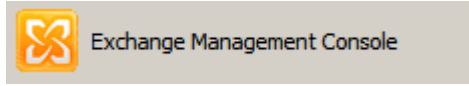
We'll begin our example by adding one for the science lab.

In the Actions/Mailbox pane, click on **New Mailbox**

In the wizard, choose the radio button marked **Room Mailbox**

Click **Next**

Choose **New User** and click **Next**

New Mailbox **User Information** Enter the user name and account information. ☐ Specify the Organizational unit rather than using a default one: [_____] Browse... First name: Initials: Last name: [HS Science] [____] [Lab] Name: [HS Science Lab] User logon name (User Principal Name): [hs-scilab-101] [@myschooldistrict.local ▼] User logon name (pre-Windows 2000): [hs-scilab-101] Password: Confirm password: [●●●●●●●●] [●●●●●●●●] ☐ User must change password at next logon	Fill out the information: Name: **HS Science Lab** User Logon Name: **hs-scilab-101** Give it a generic password and confirm it. Click **Next.**
On the <u>Mailbox Settings</u> page, give it the following alias: Alias: **HS-SciLab-101** Leave the remaining defaults, then click **Next**	**Mailbox Settings** Enter the alias for the mailbox user, and then select the mailbox location and policy settings. Alias: [HS-SciLab-101] ☐ Specify the mailbox database rather than using a database automatically selected: [_____] Browse...
Archive Settings Use this step to link an online archive to your mailbox. Items will be moved automatically from the primary user mailbox to the archive based on the default retention policy settings or those you define. ☐ Create an archive mailbox for this account ⚙ Online archives are a premium feature and require an Exchange Enterprise Client Access License (CAL) to enable it for the mailbox.	On the <u>Archive Settings</u> window, leave the checkbox unchecked and click **Next.** Finally, click **New** and **Finish**

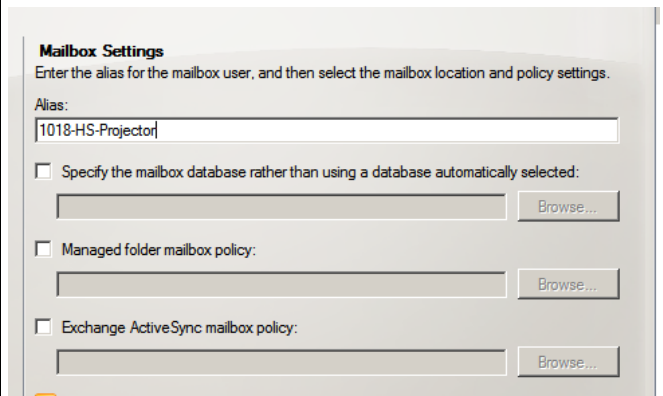| Creating Mailboxes for Equipment	
Open the <u>Exchange Management Shell</u>. Navigate to **Recipient Configuration > Mailbox.**	Exchange Management Console
	In this example, we make a mailbox for a projector In the Actions/Mailbox pane, click on **New Mailbox** In the wizard, choose the radio button marked **Equipment Mailbox** Click **Next**
Choose **New User** and click **Next**	
	Fill out the information: Name: **1018 HS-projector** User Logon Name: **1018-HS-Projector** Give it a generic password and confirm it. Click **Next.**

On the <u>Mailbox Settings</u> page, give it the following alias:

Alias: **1018-HS-Projector**

Leave the remaining defaults, then click **Next**

On the <u>Archive Settings</u> window, leave the checkbox unchecked and click **Next.**

Finally, click **New** and **Finish**

Managing Address Lists, Distribution Groups, and E-mail Addresses
Address Lists Overview

Address lists are a collection of recipient and other Active Directory objects. Each address list can contain one or more types of objects (for example, users, contacts, groups, public folders, conferencing, and other resources).

Address lists also provide a mechanism to partition mail-enabled objects in Active Directory for the benefit of specific groups of users, such as faculty at a specific campus.

Creating a Global Address List

*The Global Address List (also called a GAL) is a directory that contains entries
for every group, user, and contact within an Exchange 2010 organization.*

Open the <u>Exchange Management Shell</u> by going to **Start > All Programs > Microsoft Exchange Server 2010 > Exchange Management Shell**.

Note: This cannot be done through the Exchange Management Console.
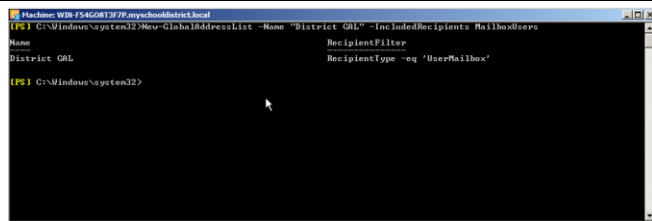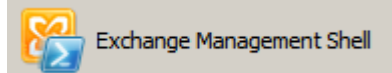
Issue the following **<u>one-line</u>** command:

New-GlobalAddressList -Name "District GAL"
    -IncludedRecipients MailboxUsers

Removing a Global Address List:	
Note: *This cannot be done through the Exchange Management Console.*	Issue the following **<u>one-line</u>** command: `Remove-GlobalAddressList -Identity "District GAL"`
Listing the Current Global Address Lists:	
Note: *This cannot be done through the Exchange Management Console.*	Issue the following **<u>one-line</u>** command: `Get-GlobalAddressList`
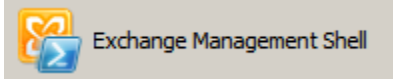
Creating a Dynamic Address List Based on Organizational Unit
Aside from global address lists, you may also consider using site-specific or organizationally separate address lists. This could be used so that students may find faculty addresses, but not one another's addresses, or to keep address lists specific to campuses. *In this example, we will show how to create an address list out of the entire Faculty organizational unit of the myschooldistrict.local domain.*

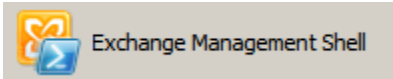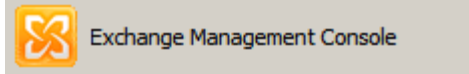|	
Open the <u>Exchange Management Shell</u>. Navigate to **Organizational Configuration > Mailbox.**	
	In the <u>Action</u> pane, click **New Address List.**
On the <u>Introduction</u> Page, give the following information: Name: **Faculty Address List** Container: **(leave as the default)** Click **Next**	
	On the <u>Filter Settings</u> page, browse to the **Faculty** container and click OK. Then you may choose **All Recipient Types**. If there are only certain types you wish to include in the list, choose **The following specific types** and check the appropriate boxes. Click **Next**

In most cases, you may click **Next** through the Conditions page and the Schedule page. Click **New,** then **Finish.**	

Applying an Address List

Address lists are a collection of recipient and other Active Directory objects. You apply an address list when the address list filter rule has been edited. To update the membership of the address list to include new recipients and remove those who no longer meet the filtering criteria, you must apply the address list.

Changes that you make to an address list aren't applied to recipients until you apply the list. You can apply changes to address lists immediately or at a scheduled time by using the New Address List wizard or the Edit Address List wizard.
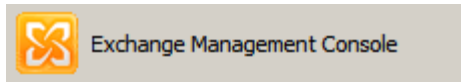
Open the Exchange Management Shell. Navigate to **Organizational Configuration > Mailbox.** Click on the **Address Lists** tab.	Exchange Management Console
Faculty Address List Apply... Remove Edit... Help	Click on the address list you want to apply—in this case, the Faculty Address List we created in the last step. In the Actions pane, click **Apply** to launch the wizard.
In the Introduction page, choose **Immediately** Click **Next**, then **Apply.** Click **Finish**	Introduction This wizard helps you reapply an address list, specify when the address list should be applied, and specify the maximum length of time the command is permitted to run. Apply the address list: ◉ Immediately ○ At the following time: Monday , June 06, 2011 7:01:33 PM ☐ Cancel tasks that are still running after (hours):
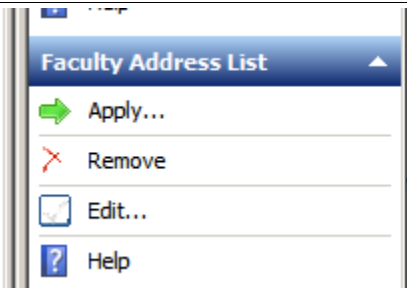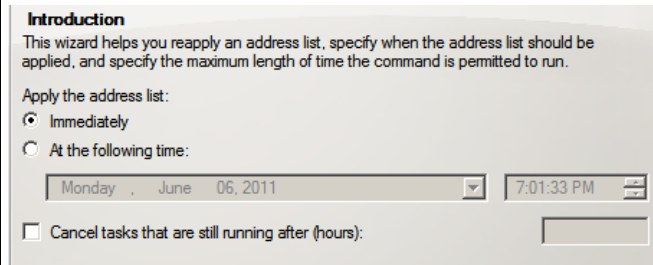
Distribution Lists Overview

Distribution groups come in two varieties with Exchange Server 2010. A Mail-Enabled Universal Distribution Group can only be used to relay messages in bulk. A Mail-enabled Universal Security Group can also perform this function, as well as grant access permissions to resources that exist within Active Directory.

Creating a New Mail-Enabled Universal Distribution Group

Open the Exchange Management Shell. Navigate to **Organizational Configuration > Recipient**	Exchange Management Console
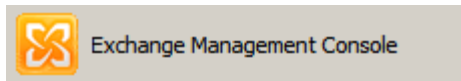
Configuration > Distribution Group	
	In the Action pane, click **New Distribution Group**
Choose **New Group** and choose **Next.** *You also may mail-enable an existing group at your discretion. If you have security groups in place for things such as access to special shares (such as yearbook) or*	
  Note: If you would also like to use this group to assign permissions within Active Directory, such as to shares, choose **Security** *rather than* **Distribution**.	In the Group Information window, choose **Distribution** as the group type. You may leave the Specify Organizational Unit checkbox unchecked. Name: **Faculty Mailing List** Alias: **faculty.list** *The Pre-Windows 2000 name will auto-complete* Click **Next,** then **New,** then **Finish.**
Distribution Group Management	
Open the Exchange Management Shell. Navigate to **Organizational Configuration > Recipient Configuration > Distribution Group**	
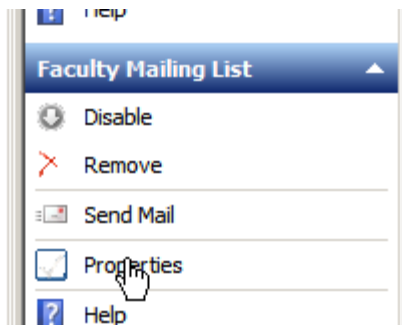
	Select the distribution group you wish to add or remove members from. Click **Properties** from the Action pane.
In the Mailing List Properties window that opens, you may add or remove users as needed. When finished, click **OK**.	
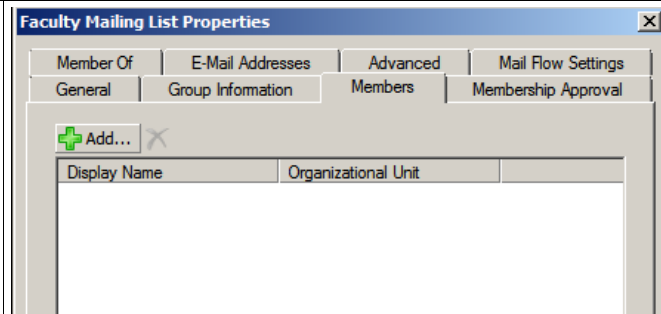
On Changing User E-Mail Addresses
Generally, there will be a few instances during which a user's name changes and therefore his or her e-mail address will need to also be changed. It is generally recommended that the user's existing e-mail address be left in place, and an alias added with the new address. This alias should then be made into the primary e-mail address.

Creating E-Mail Aliases	
Open the Exchange Management Shell. Navigate to **Recipient Configuration > Mailbox.**	
	Select the user's mailbox that you wish to add an additional e-mail alias for. In the Action pane to the right, click **Properties**. *Note: You may have to scroll down the Action Pane in order to see the Properties option.*
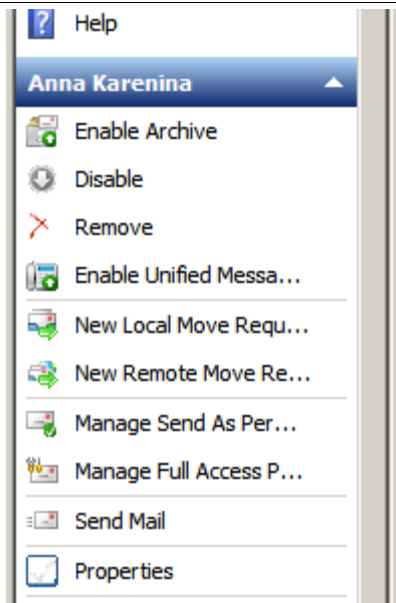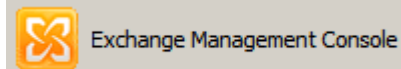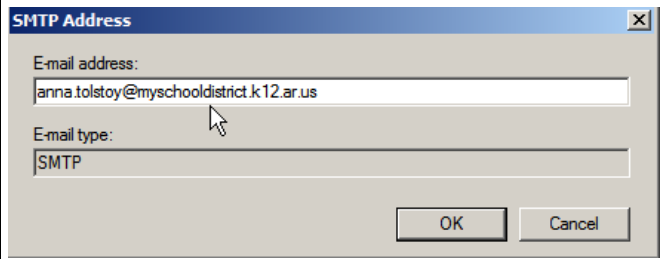
Click the tab marked **E-Mail Addresses**, then the **Add** button.

Enter the new e-mail alias in the <u>E-Mail Address</u> box.

Click **OK**, then **OK** to close out of the user's properties.

SMTP Address

E-mail address:

anna.tolstoy@myschooldistrict.k12.ar.us

E-mail type:

SMTP

OK   Cancel

APPENDIX A:
Setting up ActiveSync Policies for Mobile Devices

ActiveSync is a method of setting up smartphones and other web-enabled devices (such as iPads or Android tablets) to easily connect with your Exchange server. Through the use of policies, you can have greater control over how these devices are to behave.

It is recommended that passwords be required for devices, as these may contain student data. As the standards are currently not set for mobile devices for schools, it is important to cover these with the district's administration.

Note that prior to using ActiveSync, you __MUST__ purchase and install a multi-site UCC certificate from a third-party trusted authority. The installation and purchase of this certificate is currently beyond the scope of this document.
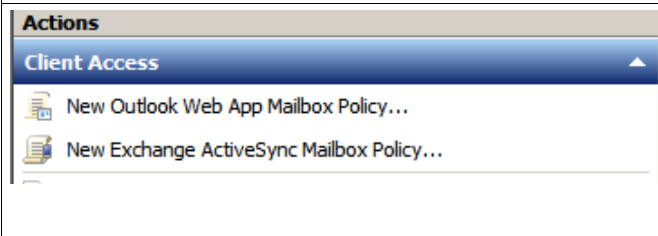
	In the Exchange Management Console, navigate to **Organization Configuration > Client Access** In the Action pane, choose **New Exchange ActiveSync Mailbox Policy**
For the Mailbox Policy Name, use *District Mobile Device Policy*	
Select the checkbox marked **Allow Non-Provisional Devices**	*Not all devices will support all of the features that ActiveSync currently offers. Those that do not support all of these features are called non-provisional devices. As these are recommendations that are being pushed from the server, at this time it is safe to allow them.*
Leave the box marked **Allow attachments to be downloaded to the device** checked.	*Again, this depends on your district's policies, and should be set after consulting with the administrative staff.*
Select the box marked **Require Password**. Select the options that are required. Click **New**, then **Finish.**	

	Next, **right-click** on the policy you created, and choose **Properties**.
Take a moment to look through the tabs, enabling and disabling the various options to tune it. Then click **OK** to exit. Finally, right-click on the policy again and choose **Set As Default**	*Note that the **Device** and **Device Applications** tabs have options that require Exchange Enterprise CALs for each mailbox on which policies are restricted or file controls imposed.*

APPENDIX B: DNS Settings

DNS Settings for Exchange Server 2010

When setting up your Exchange Server, there are a number of settings that will need to be made within your external DNS systems. These will need to be made for the server to work properly. The MX record is used to tell outside mail servers which machine is responsible for handling the mail for your entire domain.

Also, there is the matter of the Autodiscover service. Autodiscover allows you to rapidly get clients set up both internally and externally. When you set up a user on a machine, it looks to DNS to find **autodiscover.msd.k12.ar.us**. If this record is set up, it will point to your mail server, which will then send the basic information of how the clients are to connect to it. Autodiscover is also critical for other services, such as ActiveSync, which allow you to easily set up secure remote access to the mailserver for many mobile devices, such as smartphones.

The following table is for **msd.k12.ar.us**, who are using **myschooldistrict.local** as their local domain. The EXTERNAL IP address of their mailserver is **170.211.1.98** and the INTERNAL address is **10.10.103.8**. By looking at the following tables, you can see how these records need to be set up:

(Figure B.1: Standard setup with mail server, no external filtering)

DNS RECORDS FOR EXTERNAL SYSTEMS			
Record Type	**Name**	**Data**	**TTL**
A (Host)	mail.msd.k12.ar.us	170.211.1.98	(default)
A (Host)	autodiscover.msd.k12.ar.us	170.211.1.98	(default)
MX (Mail Exchange)	msd.k12.ar.us	mail.msd.k12.ar.us	(default)
SENDER PROTECTION FRAMEWORK (SPF) RECORD			
TXT	msd.k12.ar.us	v=spf1 mx a:mail.msd.k12.ar.us ~all	(default)
DNS RECORDS FOR INTERNAL SYSTEMS			
A (Host)	Autodiscover.msd.k12.ar.us	170.211.1.98	(default)
A (Host)	Autodiscover.msd.k12.ar.us	10.10.103.8	(default)
A (Host)	Autodiscover.myschooldistrict.local	170.211.1.98	(default)

A (Host)	Autodiscover.myschooldistrict.local	10.10.103.8	(default)

In some cases, such as sites that are using a mail filtering device such as a Barracuda filter or SpamAssassin server. In that case, you will want to use the same table as above, with some minor modifications. An A-record will also need to be assigned to the mail filter, and the MX record will need to point to it. Assuming that msd.k12.ar.us purchases and installs a mail filter at 170.211.1.99, this is how their DNS records would be set up:

(Figure B.1: Standard setup with mail server, using an external filter)

DNS RECORDS FOR EXTERNAL SYSTEMS			
Record Type	**Name**	**Data**	**TTL**
A (Host)	mail.msd.k12.ar.us	170.211.1.98	(default)
A (Host)	autodiscover.msd.k12.ar.us	170.211.1.98	(default)
A (Host)	filter.msd.k12.ar.us	170.211.1.99	(default)
MX (Mail Exchange)	msd.k12.ar.us	filter.msd.k12.ar.us	(default)
SENDER PROTECTION FRAMEWORK (SPF) RECORD			
TXT	msd.k12.ar.us	v=spf1 mx a:mail.msd.k12.ar.us ~all	(default)
DNS RECORDS FOR INTERNAL SYSTEMS			
A (Host)	Autodiscover.msd.k12.ar.us	170.211.1.98	(default)
A (Host)	Autodiscover.msd.k12.ar.us	10.10.103.8	(default)
A (Host)	Autodiscover.myschooldistrict.local	170.211.1.98	(default)
A (Host)	Autodiscover.myschooldistrict.local	10.10.103.8	(default)

Next, there is Unified Communicator. Most sites do not use this, but for those that do, these SRV records will need to be added. The sipfederation SRV record is only necessary if you have signed up to federate with Microsoft's servers, which would make your users available to external users of Microsoft Live/MSN Messenger. If you choose to federate, you will also need to register with Microsoft, which is beyond the scope of this document.

DNS SRV RECORDS FOR EXTERNAL SYSTEMS				
SRV	**Priority**	**Weight**	**Port**	**Target**
_sip._tls.msd.k12.ar.us	10	2	443	mail.msd.k12.ar.us
_sipfederation._tls.msd.k12.ar.us	10	2	5061	federation.messenger.msn.com
DNS SRV RECORDS FOR INTERNAL SYSTEMS				

_sip._tls.myschooldistrict.local	10	2	443	mailserver.myschooldistrict.local
_sip._tls.msd.k12.ar.us	10	2	443	mailserver.myschooldistrict.local

Regarding The SPF records:

An SPF (Sender Protection Framework) has not been traditionally used. However, as mail administrators struggle with spam daily, it is becoming more of a widespread requirement. An SPF record is a specially formatted text record (TXT) that lists the servers that are authorized to get mail for a domain. When a message is received, the receiving server checks the alleged sender's mail domain for an SPF record in DNS. If it finds one, then it checks the servers listed on it to ensure that there is a match. If the sending address is not on the list, then the mail is discarded as spam. If no SPF record is found, then often the sending address is compared against the MX, however more domains increasingly reject them.

An SPF record is formatted as follows:

v=spf1 mx a:mail.msd.k12.ar.us ip4:165.29.200.101 ~all

This is what the sections mean:

- **v=spf1** notifies the receiving mail server that this record is the SPF record.
- **mx** indicates that if the sending server is the same server that receives mail for the domain, to accept it. Usually this is desirable.
- **a:mail.msd.k12.ar.us** means to accept mail from any server that is pointed to by this DNS record.
- **ip4:165.29.200.101** (optional) means also to accept mail from this IP address. You may also do this as a subnet *(165.29.200.101/24)* or by using multiple IP addresses separated by commas. *(ip4:165.29.200.101,165.29.200.102)* However, we greatly recommend that A-records be used instead.
- **~all** finally means to reject mail from any other source. Please note that the mark is a tilde, located to the left of the '1' key, not a minus sign. This closes the record.

APPENDIX C: Using an External Mail Filter or Relay

Exchange 2010 may be used with external mail filtering devices, such as the State Spam filter or external devices such as a barracuda device. It is very important in these cases to ensure that Exchange is set up correctly, as well as the appropriate changes made in the filtering device. The device will need to hold the MX record for the mail. If it is capable of relaying for the server, this needs to be configured on Exchange.

Note: While the example below uses the state mail relay. While this was once the preferred method for systems that used the state spam filter, this is <u>NO LONGER RECOMMENDED</u>. Instead, for users of the state mail filter, it's recommended to send out mail directly by MX (which is the default) and to add an SPF record into your external DNS to prevent bounces. Instructions for creating an SPF record can be found in Appendix B.

Setting Up the Send Connector	
Open the Exchange Management Console. Navigate to **Organization Configuration > Hub Transport** Click on the **Send Connectors** tab.	
	If there is a send-connector already installed, **DELETE** it by right-clicking on it and choosing **Remove**.
In the <u>Action</u> pane, choose **New Send Connector**	New Send Connector…
	Call the new connector: **External Mail Through Smarthost** Set the Intended Use to **Custom** Click **Next**
	For the Address space, use an asterisk (*) for the address. Check the box that allows all subdomains. Click **Next.**
For the <u>network settings</u> screen, choose the radio button marked **Route Mail Through The Following Smart Hosts.**	
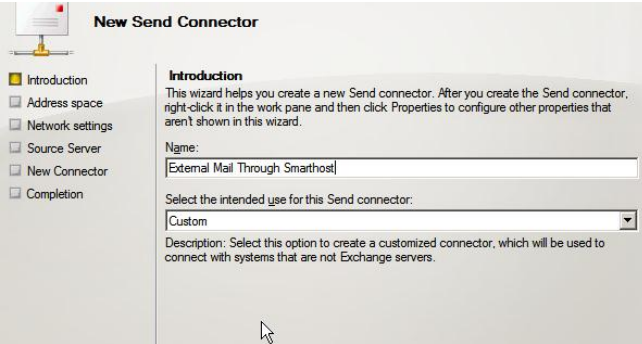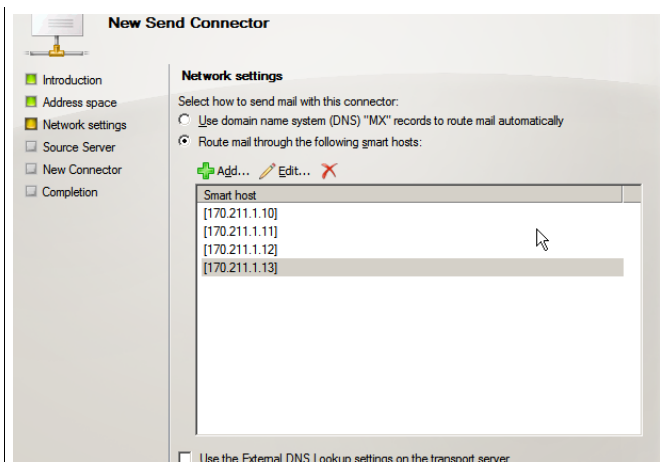
	Click the **Add** button and use the correct IP range for the outbound SPAM relay. Click **Next** when you are done *Add the addresses for your outbound mail filtering device. .* Set up the authentication settings as required and click **Next.**
NOTE: If you are using a mail filtering device or third-party service, you WILL need to set up an SPF record that details which IP addresses are allowed to send mail for your domain. Consult APSCN LAN Support for assistance in developing these if not provided.	Click **Next, New,** and **Finish.**

Limiting Default Receive Connector to the Filter

Another component of efficient spam control is to not only have all mail destined for the domain itself to be sent to the state spam filter, but to limit the incoming external mail to only be accepted from the state filter. This prevents spammers from sending mail directly to your server, rather than through the MX, which is common for botnets.

Open the Exchange Management Console. From the Microsoft Exchange On-Premises window, Navigate to **Server Configuration > Hub Transport.** In the Actions pane, click **New Receive Connector.**	
	In the New Receive Connector dialog, give the connector the following values: Name: **External Mail Via State Filter** Intended Use: **Custom** Leave the Local Network Settings set to the
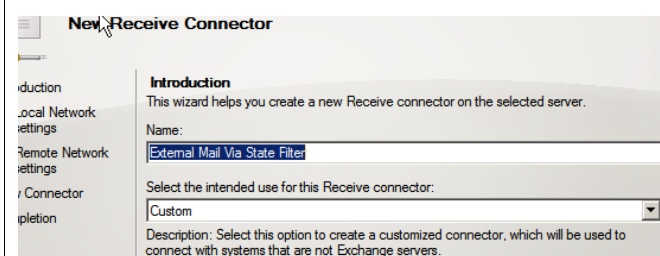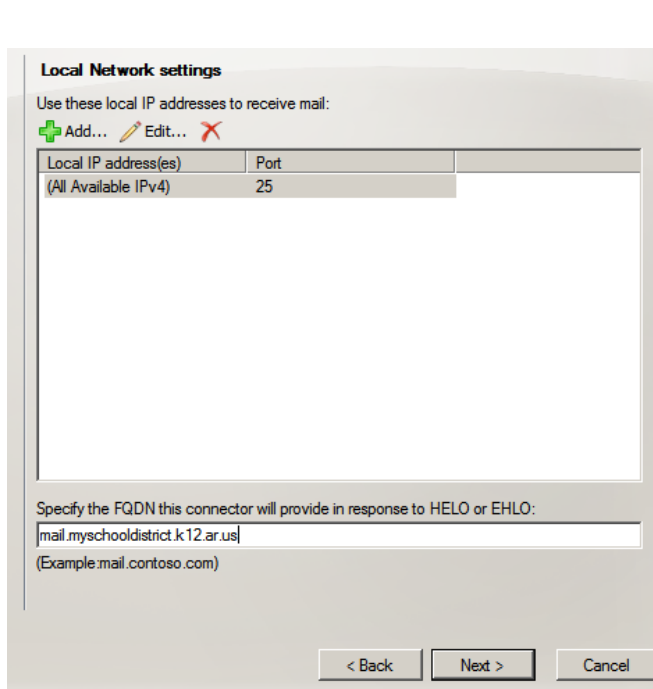
default (All Available Ipv4, Port 25).

Use your *External* name of your mailserver for the FQDN: **mail.msd.k12.ar.us**

Click **Next**

Local Network settings

Use these local IP addresses to receive mail:

➕ Add...   ✏ Edit...   ✖

Local IP address(es)	Port
(All Available IPv4)	25

Specify the FQDN this connector will provide in response to HELO or EHLO:

mail.myschooldistrict.k12.ar.us

(Example:mail.contoso.com)

[< Back] [Next >] [Cancel]

Under Remote Network Settings, **remove** the default setting of 0.0.0.0. Next, add the server by IP address or cluster by IP range in CIDR notation.

Click **Add** and give the IP address (or cluster in CIDR format, which we will be using here)

IP addresses: **165.29.1.128/25**

Choose **Next**

Remote Network settings

Receive mail from servers that have these remote IP addresses:

➕ Add... ▾ ✏ Edit... ✖

IP address(es)
165.29.1.128/25

New Connector
The wizard will use the configuration below. Click New to continue.

Configuration Summary:

External Mail Via State Filter   ☆

   Name: External Mail Via State Filter
   Type: Custom
   IP Address(es):
       (All Available IPv4): Port 25
   FQDN: mail.myschooldistrict.k12.ar.us
   Remote IP range(s):
       165.29.1.128/25

Next, choose **New**, then **Finish**.
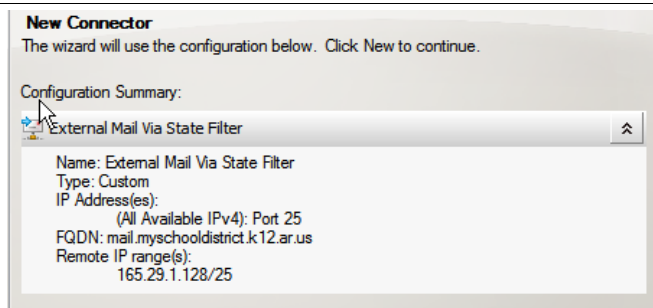
Finally, ensure that the Default connector is set for **Disabled**. .

APPENDIX D: Backing Up Exchange Server 2010

Exchange Server 2010 is highly dependent on backups. Transaction logs are kept until Exchange is certain that the latest backup of the database has these transactions. This is great as it helps to keep lost mail to a minimum, but presents challenges of its own. Namely, the partition that contains the transaction logs can—and will—fill up quite rapidly if the database is not backed up often.

If the partition does become full, then you will need to expand that drive space, obtain a full backup of the database and transaction logs, then enable circular logging temporarily to clear out the logs.
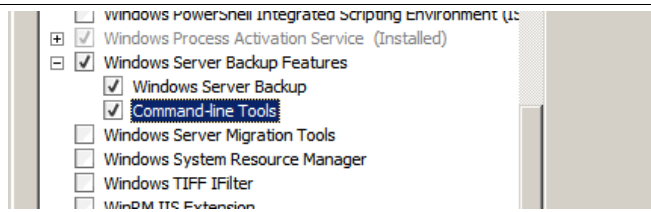
Preparation: Installing the Windows Backup Service

Open the **Windows Server Manager** by going to **Start > Administrative Tools > Server Manager** Click **Features** from the tree menu to the left, then choose **Add Features** from the upper-right corner of the <u>Features Summary</u> window.	
	Check the box next to **Windows Server Backup Features.** Ensure that both sub-items, **Windows Server Backup** and **Command-line Tools** are checked. Click **Next**, then **Install.**
Finally, click **Close**. You may exit out of Server Manager.	

Create the Scripts for the Backup

One of the issues that the Windows server backup utility has is that it wants to create a full backup of the system partition every time. That may take up an extra 20-30+ gigabytes of space than the Exchange databases. While this is great from a recovery standpoint, it's not the most efficient means of getting the regular Exchange backups. The other option is to create a batch file that uses specific command-line code to only back up the drives that contain the database and transaction logs.

Note: If you are backing up to a removable drive, it's best to share out this drive, then use the same directions below for backing up to a shared network location.

If backing up to a shared network location

Open **My Computer** and navigate to the **C:** drive. Create a new directory on **C:** called **AdminScripts**	*It is easier to manage scripts if they are held in a common location. It is the preference of the author to call it AdminScripts. You may change this to your preference.*
	In AdminScripts, create a new text document with Notepad.

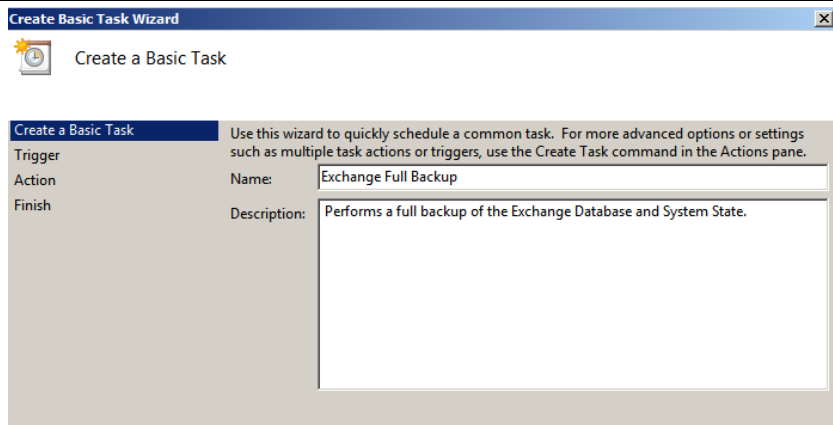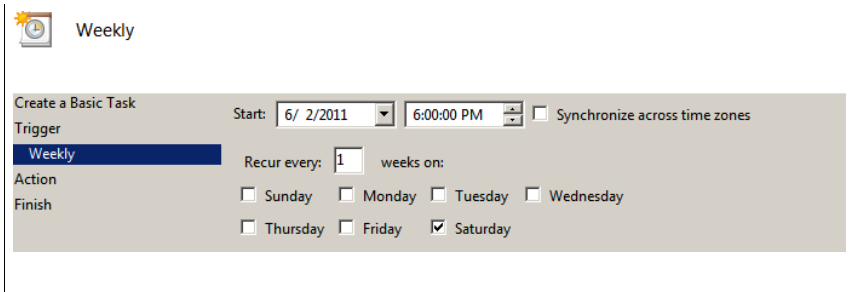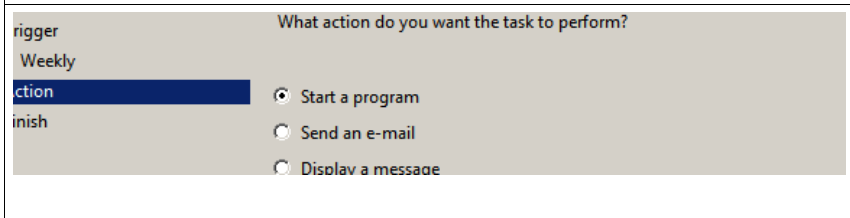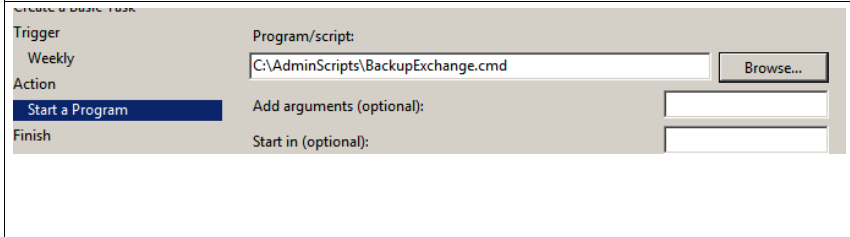|	
@echo off wbadmin start backup -include:E:\,F:\ -backuptarget:\\backup\exchange - systemstate -quiet *(NOTE: -quiet is not on a separate line.)*	Type this script exactly, replacing \\backup\exchange with whatever share you'll be sharing out to, and the drive letters for your Exchange databases and Transaction logs. This will also back up the system state.
*Make certain you change the <u>Save as Type</u> to **All Files**. Otherwise it will be saved as BackupExchange.cmd.txt, which will NOT kick off the backup job.*	Choose **File > Save As** Navigate to the C:\AdminScripts folder. File Name**:** **BackupExchange.cmd** Save as Type: **All Files** Click **Save** and exit Notepad.
Setting Up the Script to Run as a Scheduled Task	
Navigate to **Start > Administrative Tools > Task Scheduler.**	
	In the Actions Pane, choose **Create a Basic Task.** Give the task the following data: Name: **Exchange Full Backup** Data: **Performs a full backup of the Exchange Databases, T-Logs, and System State.** Choose **Next.**

Weekly Create a Basic Task Trigger **Weekly** Action Finish Start: 6/ 2/2011 ▼ 6:00:00 PM ▲▼ ☐ Synchronize across time zones Recur every: 1 weeks on: ☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☑ Saturday	Choose **Weekly,** then **Next.** For the purpose of this tutorial, we will be doing the Exchange backup every Saturday night at 6:00 PM.
rigger Weekly **ction** inish What action do you want the task to perform? ⦿ Start a program ○ Send an e-mail ○ Display a message	On the <u>Action</u> page, choose the radio button marked **Start a Program**, then choose **Next.**
Create a Basic Task Trigger Weekly Action **Start a Program** Finish Program/script: C:\AdminScripts\BackupExchange.cmd [Browse...] Add arguments (optional): Start in (optional):	For the Program/Script, browse to the **BackupExchange.cmd** script you created in the previous segment. Choose **Next,** then **Finish.**

APPENDIX E: Troubleshooting Startup Issues

There are many things that can cause an Exchange Database to not start up correctly. Usually when dealing with these, the number of errors in the event log will increase exponentially and it will be difficult to determine which ones to work with. The best rule of thumb is to make sure all Exchange services are stopped, clear out the logs, then restart it. Begin with fixing the first error in the list, then clear and re-try. Usually one error early will cause many various ones later as the component services attempt to start up.

Most startup issues with Exchange 2010 are based on three things: Availability of Active Directory, adequate drive space, and database integrity.

Availability of Active Directory

In many cases, such as the event of a building-wide power failure, the Exchange server will be booted at the same time as the site's domain controllers. Because Active Directory is one of the last few items on a Windows server to start, this can cause the following errors:

Event ID : 1005
Source : MSExchangeSA
Category : General
Type : Error
Description : Unexpected error The Local Security Authority cannot be contacted ID no: 80090304 Microsoft Exchange System Attendant occurred.

Event ID: 2601
Source: MSExchange ADAccess
Category: General
Type: Warning
Description: Process MSEXCHANGEADTOPOLOGY (PID=1624). When initializing a remote procedure call (RPC) to the Microsoft Exchange Active Directory Topology service, Exchange could not retrieve the SID for account <WKGUID=DC1301662F547445B9C490A52961F8FC,CN=Microsoft Exchange,CN=Services,CN=Configuration,...> - Error code=80040934. The Microsoft Exchange Active Directory Topology service will continue starting with limited permissions.

Event ID: 1121
Source: MSExchangeIS
Category: General
Type: Error
Description: Error 0x96e connecting to the Microsoft Active Directory.

Event ID: 5000
Source: MSExchangeIS
Category: General
Type: Error
Description: Unable to initialize the Microsoft Exchange Information Store service. - Error 0x96e.

To fix this, wait for the Domain Controllers to start, then reboot the Exchange server. Also, the following registry entries may be added to the Exchange 2010 server to create an additional delay before attempting to start. These will help as they give Active Directory adequate time to start before the various Exchange services begin. The server will need to be rebooted prior to these taking effect:

Registry Path	Registry Subkey (Multi_SZ)	Registry Values
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeSA	DependOnService	EventLog, RPCSS, LanmanWorkstation, LanmanServer, Netlogon
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services	DependOnService	Netlogon

\MSExchangeADTopology		
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeIS	DependOnService	Netlogon
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeADTopology	DependOnService	MSExchangeSA
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeIS	DependOnService	MSExchangeSA
HKEY_LOCAL_MACHINE\\System\CurrentControlSet\Services\MSExchangeSA\Parameters	BootPause	180120

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Adequate Drive Space		

Many of the components of Exchange 2010 cannot start without adequate space. One of the most common pertains to the log files on the system volume, and another to the transaction logs that are utilized by Exchange itself.

The transaction logs will automatically be deleted by Exchange once it is convinced that the mail store has been backed up. It is imperative that these not be deleted manually if at all possible, with the exception of certain cases, because these contain every single transaction that has occurred on the Exchange system prior to the last backup of the database. In the event of the database being crashed beyond repair, these can be played back to the backup to prevent lost mail.

Reclaiming Drive Space on the Transaction Log Partition OR Repairing the Database:	

In order to claim the transaction log space, you will need an external drive roughly equivalent to 115% of your mail store. Plug the drive into the server. For purposes of demonstration, we will refer to this external drive as H: although the actual letter mapped to it will differ depending on your server configuration.

This procedure is also the same as the one used if the database is in a corrupt state, such as a Dirty Shutdown caused by power loss before changes can be committed.
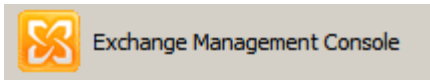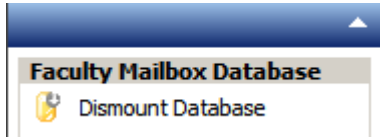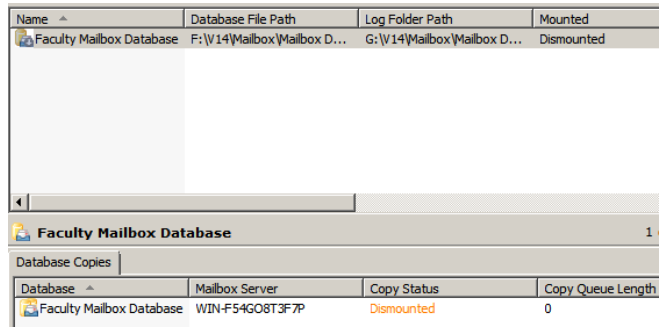
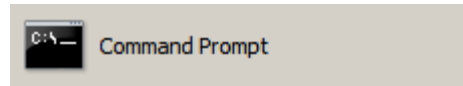| Exchange Management Console	First, check the state of the mailbox databases to ensure that they are Not Mounted:
	Open the Exchange Management Console and navigate to **Organization Configuration > Mailbox**.
	Select the tab marked **Database Management**.

|	
Looking at the figure to the right, you'll notice that there is one mailbox database. The database itself is located on the F: drive, with the logs located on the G: drive. Looking at the bottom pane, we see the details of the database. The copy status has it listed as **Dismounted.**	
	If the database is <u>NOT</u> dismounted, you must do so by clicking on the database in the bottom pane, then choosing **Dismount Database** from the <u>Action</u> pane to the right. **<u>It is HIGHLY recommended that you grab a full backup of the Exchange database and transaction logs before proceeding</u>**
Next, open a command prompt. You will need to navigate to the drive and directory that the log files for the database are kept in. **cd G:\path\to\exchange\logfiles**	
Eseutil /p F:\path\to\exchange\database.edb /t h:\tempfile **Eseutil /d F:\path\to\exchange\database.edb /t h:\tempfile**	Once you are in the directory that contains the log files, issue the command to the left, adjusting paths and filenames as required for your own Exchange organization. You can make typing in the path to the database easier by using the TAB key after the first couple of characters of each directory. Do <u>not</u> interrupt the Exchange server. Each step will take one to several hours to complete.
Once it completes, you may delete all of the transaction log files.	**Del *.log**
Finally, perform a full backup of the Exchange 2010 database immediately, then reboot the server. Also schedule regular backups to prevent recurrence. The methods for doing so may be found in Appendix E:	
If the System Volume (C:) is Full: Tuning Audit Logs	
Another common cause of Exchange system failure is if the Windows System volume—usually the C: drive—is full. This is commonly caused on Exchange 2010 servers due to mistuned audits for object access. This may be corrected as follows:	

On the Exchange server, open the **Local Security Policy Editor**. The easiest way to accomplish this is to go to **Start > Run** then type **secpol.msc**
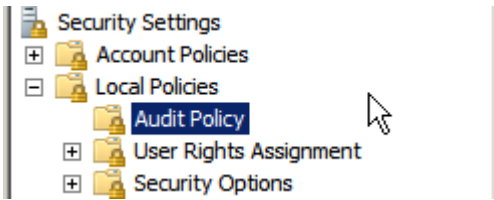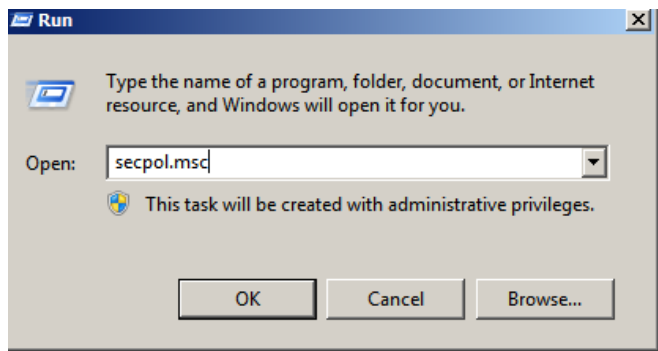
Within the Local Security Policy screen, navigate to **Local Policies > Audit Policy**

Check to ensure that **Audit Object Access** is set to either **No Auditing** or **Failure**, then click **OK**

Since Exchange uses object access every time a mailbox is accessed by a user or by the Exchange backend, if Success is checked, the logs can quickly grow out of control.
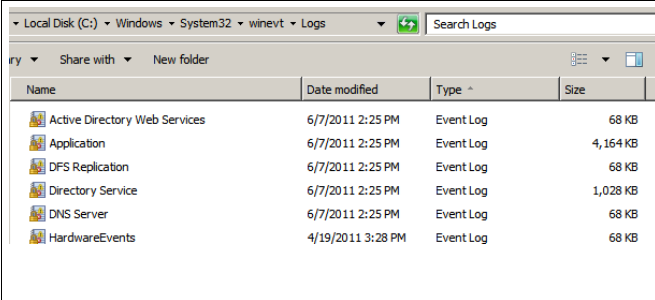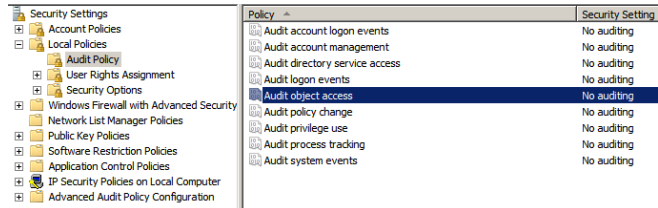
Close the Local Security Policy, then navigate to C:\Windows\System32\winevt\Logs

Delete all .evtx files within this folder. They are listed with the Type Event Log

Reboot the Exchange 2010 server so that the new audit settings can take effect.